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**FORMER NEBRASKA ORDINANCE PLANT**

**RESTORATION ADVISORY BOARD MEETING**

**HELD IN MEAD, NEBRASKA**

**DATE: OCTOBER 26, 2006**

**TIME: 7:00 P.M.**

**Videographer: John Thomas**

(Whereupon, the following proceedings were had, to-wit:)

MR. ANDERSON: Good evening. I'm Garth Anderson. I'm from the Corps of Engineers. I'm the project manager for the site and also the Army RAB co-chair. Tonight we're going to start with our usual introductions and administrative items. We'll cover the agenda, some items and some things that have happened since the last RAB. And tonight we're going to be talking about our groundwater monitoring program. That's a standard part of our RAB meetings, talking about the data we've collected in the past, actually from the June sampling event as promised. We'll talk a little bit about our expanded monitoring well network that we've been talking about for quite a long time, but we're actually at the point of getting ready to install some wells. And we're going to talk about a response action process that has been in some documents before, but we'll get into more detail about that.

Slide, please.

All right. Just some introductions.

Again, I'm Garth Anderson from the Army Corps of Engineers. In the back we have our community co-chair, Melissa Konecky. If you can give everybody the hi sign. And other RAB members that are here, I thought I saw Paul Randazzo come in. There he is. Paul, nice to see you tonight. And then John Wageman, I don't think he's here tonight. Some of the other RAB members that regularly come, we have -- well, Bruce Haley represents the University of Nebraska, Larry Angle from Lower Platte North Natural Resource District, welcome tonight. And these are the rest of our RAB members. And let's talk about some of the other folks. Other here from EPA Region 7 are Scott Marquess and Alyse Stoy. Also from the Corps of Engineers we have Jill Fraley. She's coming up -- this is her first time at a Mead RAB, so welcome, Jill. And Jill will also be bringing the microphone around to people when they have questions.

And also tonight some of the speaking parts will be done by some of our contract personnel. Lisa Tholl from URS has been up on the site for 15 years now or

54 more. And Brady Bigelow, he'll be giving part of the presentations tonight too.  
55 Okay. Meeting guidelines. Again, it's public participation. That's why we're here.  
56 Let's try to get out of here at a decent hour. Again, I think the weather is a little cool.  
57 People probably want to get home and watch the World Series if you're a baseball fan  
58 like I am. Let's try to stick to the agenda the best we can. Questions are welcome, but  
59 let's try to make it one question at a time and not step on each other's toes, and, of course,  
60 respect everyone's opinion and questions.

61

62 As we all know, meetings are being recorded. We generate a DVD at the end of the  
63 meeting which gets posted in the library. We have both the video and we have a  
64 transcriptionist who will produce a written transcript of the meeting afterwards.

65

66 One thing we ask you to do is if you ask a question or speak, please state your name  
67 clearly so that the transcriptionist can get that and it comes out clearly in the video.  
68 The mailing list, if you come in, please sign in so you're on the mailing list and if you  
69 have an e-mail address so I can send you notifications when new information is posted on  
70 the website.

71

72 And there is our project website. Many of you have been familiar with it and have  
73 accessed it in the past.

74

75 MS. MOORER: Mr. Anderson, Lynn Moorner.

76 I wanted to insert this at the appropriate place in the meeting to let you know that  
77 your mailing list doesn't function properly. I was informed earlier today of several  
78 people whose names are on the mailing list who do like to attend RAB meetings as  
79 frequently as possible. They only received today the letter from you saying today  
80 was the meeting for the RAB meeting. Your letter bore an October 1st date, but the  
81 postmark was not until October 23rd. So that is completely inadequate with respect to  
82 informing the interested public. So providing your name and your address does not

83 necessarily mean that you're going to be apprised of the upcoming meetings and all other  
84 related events in a timely fashion. The other thing is I need to point out too, a lot of  
85 people relied for a long time on the inaccurate information that you had posted on the  
86 website with respect to the date. It continued to bear the previous -- the unconfirmed date  
87 -- I don't remember what it was -- whatever it was you announced at the last meeting.  
88 And then Co-Chair Konecky needed to inform you that you had not confirmed that as a  
89 good date for the community. Nevertheless, the website continued to post that inaccurate  
90 date for a very long time. That also was a confusing factor that also caused people not to  
91 be able to come this evening. So I think the record needs to reflect that your system  
92 continues to be highly flawed with respect to timely informing the interested public with  
93 respect to accurate information.

94  
95 MR. ANDERSON: Thank you.

96  
97 Okay. Again, let's review the agenda. Again, we're going to cover some activities since  
98 the last RAB meeting. Our groundwater monitoring results, the expanded well network  
99 and the response action process, those are the big topics for tonight's meeting. So without  
100 further adieu, what have we done since the last time? Of course, groundwater sampling  
101 we do quarterly. We did sample in June which was actually before the last RAB meeting,  
102 but because it takes 60 to 90 days to get validated data, we already reported the previous  
103 quarter's sampling. So for this meeting -- and Brady Bigelow will be discussing that later  
104 -- we'll be talking about the June 2006 sampling event.

105  
106 The second item that's happened, we do have agreement and approval from the regulators  
107 on our expanded monitoring network both in the south and the eastern parts of the  
108 perimeter. And drill crews are mobilizing to the site even as we speak. We continue to  
109 evaluate the performance of our new load line 1 extraction well and treatment system.  
110 We make sure we operate it for a year to evaluate the hydraulics and the chemical data in  
111 and around the end of that plume. We continue to work on the resolution of the -- of  
112 what we consider a foundation document for evaluating performance of this system, the

113 containment evaluation work plan. We're getting very close to finalizing that particular  
114 document between EPA, NDEQ and the Army. An important component of that  
115 containment evaluation work plan was the expanded monitoring well network that we  
116 approved now and so we could get to work on it and work on some of the details of the  
117 rest of the plant as we install wells. We have completed the design for the advanced  
118 oxidation process pre-treatment system on extraction well 11. And let me just point that  
119 out real quick for you. That's right here in the middle plume. That was installed in the  
120 original containment system. That's the one where we discovered that the plume was  
121 actually further than we had discovered in the initial investigation, and it was so high that  
122 we had to shut it off. Well, in the meantime we finished the design on a pre-treatment  
123 system that actually treats the water on its way to the treatment plant so it doesn't  
124 overwhelm the treatment plant and we'll be able to turn this well on when we get the  
125 construction done.

126  
127 And this well will actually serve as a focused extraction well in this plume. And when  
128 we turn that one on, we'll -- the design is such that it should actually cut this plume in  
129 half. And again, we'll have more details on that as construction is imminent.

130  
131 MS. MOORER: Mr. Anderson, Lynn Moorers.

132  
133 Is this the appropriate time to ask a question about EW11, the advanced oxidation  
134 process?

135  
136 MR. ANDERSON: Sure, go ahead.

137  
138 MS. MOORER: I was wondering, what volume of oxidants will you be using and storing  
139 on site as part of the advanced oxidation process?

140  
141 MR. ANDERSON: Well, I'll defer to -- Lisa, do you know the answer to that question  
142 specifically, or Brady?

144 MR. BIGELOW: That will be a part of the final design. Right now we're at a 35 percent  
145 -- right now I believe we're looking at around 200 gallons of the permanganate mixture  
146 and then -- or peroxide mixture. And then the ozone will be generated with an instrument  
147 machine. So it will store as little as possible.

148

149 MS. MOORER: So what's the maximum volume that would be stored there on site?

150

151 MR. BIGELOW: We won't know that until we do the final hundred percent design. So  
152 we'll know -- it depends on what the -- we're at a 35 percent design right now. We'll take  
153 it to 90 percent --

154

155 MS. MOORER: I think you need to explain what you mean by a 35 percent design.

156

157 MR. BIGELOW: There's a conceptual design is where we start. And then we go to  
158 different vendors to determine who has the best solution for what we need to have done.  
159 Then we take that and we ask them to come back to us with what we call 90 percent  
160 design using their instrumentation and their technique. Once the Corps and ECC, the  
161 URS review, make changes, move on from there, we go to a hundred percent design.  
162 That's when we'll have final layout of this system, the dosage rates, how much we have to  
163 store on site, because there's different ways -- there's different mechanisms in which we  
164 can store this material. It depends on where we end up in the hundred percent design.

165

166 MS. MOORER: Okay. So your ballpark guess though in terms of volume is roughly  
167 what?

168

169 MR. BIGELOW: Maybe a couple hundred gallons at a time, maybe two hundred gallon  
170 total.

171

172 MS. MOORER: All right. And then what are the chemical hazards associated with  
173 mixing hydrogen peroxide and ozone together in order to  
174 create a chemical reaction to treat TCE?

175 MR. ANDERSON: That's a great question. You know, obviously it's a very, very  
176 strong oxidant. And that's why we selected this, because it actually treats the TCE in the  
177 pipe as it travels from the extraction well to the treatment system and knocks it down on  
178 the way. Obviously, any chemical has some inherent hazards to it, but this will be, you  
179 know, in a sealed system and there would be minimal exposure to any human.

180

181 MS. MOORER: I would appreciate a direct answer to my question. What are the  
182 hazards that are associated with this type of chemical reaction?

183

184 MR. ANDERSON: I don't have that specific answer for you tonight.

185

186 MS. MOORER: Do any of your colleagues have information they can share specifically  
187 on that point?

188

189 MR. ANDERSON: Not tonight. We'd be happy to address it at the next RAB meeting.  
190 If we'd would like to talk about the EW11 advanced oxidation process as an agenda  
191 topic, we'd be more than happy to do that.

192

193 MS. MOORER: Would you refresh our memories then, roughly when are you targeting  
194 to have this operational?

195

196 MR. ANDERSON: I need to check back with my schedule to, you know, give you an  
197 exact date.

198

199 MS. MOORER: Roughly.

200

201 MR. ANDERSON: It will probably be another year before it actually goes on line.

202

203 MS. MOORER: I definitely think that would be very much appreciated in the  
204 community if you can give us a lot more information about the nature and types of

205 chemicals you're going to be using and hazards associated with that in some real detail  
206 and put together in a way that ordinary lay people like myself can understand.

207

208 MR. ANDERSON: That's a fair request. And we'll put it down as a tentative agenda  
209 project for the next RAB if that seems to be a consensus item.

210

211 Okay. Got it. Great.

212

213 All right. At this time I'd like to have Brady Bigelow come up and talk about the  
214 monitoring results from the June '06 event. I would like to point out, you may have  
215 picked up a copy of the slides, the actual PowerPoint slides. But there's a companion  
216 document that goes with it where I've blown up the actual drafts of some of the trends  
217 we're going to talk about, because the way they're printed with two to a page is a little  
218 difficult to read. So make sure you have both sets so when we talk about data trends,  
219 you can actually have something you can read. And there's also a slide at the very end  
220 that we'll talk about surface water screening levels that is not including in the original  
221 packet. And we want to discuss that tonight as well.

222

223 Brady, it's all yours.

224

225 MR. BIGELOW: Thank you. Brady Bigelow from ECC.

226

227 Next slide.

228

229 So in September -- and this is reflected in some of these figures in the back, I believe  
230 they're the ones on the right side -- we sampled 74 monitoring wells, 76 residential water  
231 supply wells and 13 surface water locations. And again, you can see which ones on  
232 these maps back here (indicating). We've got the data result letters and the summary  
233 report. Those were all sent out for the June event. And we anticipate sending the  
234 September result letters and the summary report, have that ready to go by January,  
235 hopefully the beginning part of January.



For the June event that we finished, and the data is all in, the summary report is posted on the project website. We have a copy of it in the Mead library. The summary report is in the handout back here (indicating). And then we're going to talk a little bit about some of the trends. A few RABs ago we had a request for not just putting data tables out but talking about the trends and if we're seeing any significant changes. So I tried to pull out virtually all of the surface water that -- any of the detects we have, and if we have some trends, we'll look at that. And then some of the monitoring wells that we had detects in, we'll talk a little bit about the trends and what that means and where they're located.

The first one here, this is monitoring well 80. And 80 is just above Silver Creek, right down here (indicating). So it's just south of our extraction well EW12. And what you're looking at here -- and this is a little difficult to see from back there. But these wells are installed in a cluster. There's a shallow well, an intermediate well, and then a deep well that's actually installed in the top five to ten feet of the bedrock.

Is it five feet? Help me, Dave.

MR. DANDER: Between five and ten.

MR. BIGELOW: Between five and ten. And that's what you're seeing here. The first one right here is the shallow, and then it goes in the intermediate here, and these are the deep results, the third one in. These are a little bit interesting. You know, we've been collecting now quarterly since we installed these wells. And this line here shows where we started EW12, where we first turned that one on. So we had an increase as we were testing once the monitoring well was in. Once we turned this one on, we started to see a decrease. This is the shallow zone, and it is not as transmissive, or the flow is greater here. So that's why we -- we assume that's why we're seeing a quicker drop there. So this is what we're seeing from, again, the well that's just south of extraction well 12.

This one is monitoring well 89. 89 is just north of extraction well 12. And at this point

267 we're we believe right on the edge of the load line 1 TCE plume. Again, we've got low  
268 levels; we detected low levels. After the startup of the plant, the levels remained  
269 essentially the same; we've got a little bit of a drop in the intermediate zone. But we did  
270 have a detect in the June sampling event, so I wanted to include it on here so you could  
271 take a look and see how the extraction system is affecting this one.

272

273 This one is 90. 90, again, is north of the extraction well 12, and it is in what we consider  
274 in the plume, in the footprint of the plume. Here we're getting a steady increase relatively  
275 speaking. We got a spike here. We'll see in the next round whether or not that's  
276 reproducible. Like I said, we see a steady increase up in all the wells essentially. Again,  
277 that is above extraction well 12, and we expect to see and we hope to see an increase  
278 there, meaning we're pulling the plume into this area.

279

280 This is monitoring well 85. I want to go back to this one because this is the one that's  
281 located north of the treatment plant where we had a hit, gosh, it's been about a year and a  
282 half ago now. But we continued to sample this well because we had this anomalous  
283 result here. It seemed out of place, and we weren't sure what was going on there. And  
284 we've continued to sample it since. And you can see that they're relatively stable coming  
285 across here.

286

287 So we've never really reproduced this, but we're continue to watch it just in case. But so  
288 far so good.

289

290 MS. FRALEY: Brady, I think we have a question.

291

292 MR. BIGELOW: Yes?

293

294 MR. RANDAZZO: Paul Randazzo. If you go back to that 52 -- yeah, that one there -- is  
295 that like an anomaly do you think? Or what is the situation there? It seems a  
296 little odd.

297 MR. BIGELOW: It does seem odd. And, you know, we sample those wells quarterly  
298 right now. So I'm looking forward to seeing what that result is this next time. That will  
299 be out in the next month or so.  
300

301 MR. ANDERSON: Show him on the map -  
302

303 MR. BIGELOW: Oh, yeah. This is -- monitoring well 90 is right up here north of  
304 EW12. But you're right. Even though it's above our extraction well and, you know, by  
305 all indications it will be captured by it, it does seem like a jump like that would be  
306 unusual. But again, we've sampled that in September. And that's the one that will tell us.  
307 If we're back down and it's falling along the trend lines, I think things will make a little  
308 more sense. If we see a significant jump up again, that may change a little bit of what we  
309 look down there and what we do. But again, I think the next round is really going to tell  
310 us where we are on that.  
311

312 Next slide.  
313

314 These are the surface water we want to start up. This is SW06, which is up here. Again,  
315 we don't really see high concentrations in that area, but --  
316

317 MR. DANDER: SW8.  
318

319 MR. BIGELOW: I'm sorry. Are we on 8? No, 6. We want to start at the top and kind  
320 of work our way down. But this is the one that we get detects in but relatively low and  
321 kind of where, you know, we first start to see detects in Johnson Creek.  
322

323 The next one would be just below that would be SW8, which is right here (indicating),  
324 sort of right in the middle of the action down here. That one has been relatively stable.  
325 This last time we were at 41.7. Again, we get a little bit of an influence of rain, although  
326 I think up till this last sampling event it's been relatively dry when we've been out  
327 sampling. So no significant changes. It's come down a little bit from its high, but it's still

328 about the same.

329

330 This is SW10, which is straight down from 8, again, right along the Johnson Creek, right  
331 down here (indicating). Again, relatively close to the same. We're not seeing a big  
332 change. This kind of variation could well be because of the influence of how much water  
333 is flowing through there. SW11, one more time we wanted to include this one. This is the  
334 one out on Clear Creek. We got a detect of 12 back in '04, right at the end of '04, and  
335 really have never reproduced it since, but we continue to keep an eye on it just to make  
336 sure that that was an anomaly and it wasn't an indication of something going on out there.  
337 This is the RDX we're seeing for SW06.

338

339 Again, that's at the top part up in this area (indicating), so it's the first area we start to see  
340 any kind of influence. We've gone down to non-detect on this last one. RDX again on  
341 SW08, which is just south of there, again, relatively stable for the most part.

342

343 This is SW10, again, straight south of SW8, and no real significant changes there. And  
344 this slide talks about screening levels.

345

346 MS. FRALEY: Actually, before we go there, we have another question.

347

348 MR. BIGELOW: Okay.

349

350 MS. MOORER: I have a question about slide No. 15 that was the monitoring well cluster  
351 80. I'm looking at the fourth bar pairing over from the left. So that would be April 5th,  
352 2006. Right. Okay. The actual data that you have posted on the website shows that  
353 there were three different samples taken on that day at this well, and you have three  
354 different results. What you've got posted there at the intermediate level here is 15.6. No,  
355 it must be the shallow limit. 15.6, the one on the left, is that the shallow one?

356

357 MR. BIGELOW: Yes.

358

359 MS. MOORER: Okay. So it also shows that one of the other samples was 17.0 was the  
360 result for TCE. This was the one that said "field duplicate." And then another one that  
361 said the result was 17.8.

362

363 So I'm wondering why out of the three of those you chose to display the lowest one. To  
364 me it seems somewhat misleading. Would it not make -- wouldn't it be more accurate to  
365 identify the fact that that's the lowest of the three that you -- of the results that you got on  
366 that day? And I notice this is not the only value you've done that to. That is, you took  
367 several samples on the same day, but what you've chosen to display for us is the lowest  
368 reading. And I think in order for it to be -- to provide all of information, you need to  
369 indicate also though there were also higher readings on those days in addition. Can you  
370 explain, Mr. Bigelow, why you chose to display only the lowest reading and didn't  
371 convey the information about the other higher readings?

372

373 MR. BIGELOW: What you're seeing here is the primary analysis. We don't really  
374 choose which one. It's the sample -- it's the primary sample. So you have a sample you  
375 take, and then like you pointed out, the field duplicate, and then there may be other QC  
376 associated with that. When we do the queries to generate these, we don't query the QC  
377 and then pick out the highest one to put on here, we choose the primary result.

378

379 But you have a point there. And we can look at if there's a -- you know, the field  
380 duplicate is used to see if there's a significant difference between the two results to make  
381 sure we don't get a real high result on one and the other. And that's kind of where that  
382 one ends. But if you would like to see on here -- now, the problem, what happens, when  
383 you put multiple data points for one date, these graphs get a little hard to follow and a  
384 little hard to read. So I was trying to simplify. But again, we don't select -- we don't go  
385 in and say, well, that one's lower, that's the one I want to show. It's just the primary  
386 result that it pulls out.

387

388 MS. MOORER: Could you explain what "primary results" means?

389

390 MR. BIGELOW: It's the sample that we took. So we go out and we take a sample from  
391 the well  
392  
393 MS. MOORER: But you also took two other samples also.  
394  
395 MR. BIGELOW: QC samples. That's correct.  
396  
397 MS. MOORER: But those are not primary samples?  
398  
399 MR. BIGELOW: They're QC, quality control, samples. And they're, again, the  
400 duplicates used to evaluate whether or not there may be other contamination, whether the  
401 samples are homogenous. You know, it's used for other things. But typically we don't go  
402 in and select what data we want. We use the data that it gave us.  
403  
404 So again, the sample from the well is what we use here, and we run quality control on  
405 that with things like field duplicate, sometimes matrix spikes. You know, there's lots of  
406 different QCs. Sometimes it goes to the QA lab. But that's to validate that first result.  
407 Typically we don't -- and we don't do it the other way either; we don't go in and pick the  
408 high one and use that because it fits a graph better, we use what we got from the well.  
409  
410 But again, we can try to use that data. It's just a little difficult when you're trying to do  
411 trend graphs.  
412  
413 MS. MOORER: I would certainly say from the history of you all not being  
414 straightforward with us in so many different respects, with respect to the information that  
415 you provide us, it certainly would behoove you to do your very best to not misrepresent  
416 and to make sure that the information you provide is a fair representation of all the  
417 information you've got on each of these. I should point out too perhaps, you may recall at  
418 the last meeting, the July RAB meeting, this was the map that you handed out for us.  
419 This may look familiar. This is what you talked from, and you had a big version of this  
420 up on the wall there on the north. And as you asserted to Co-Chair Konecky that you

absolutely were not briefing us from out-of-date maps. You said, no, these were accurate maps. But you need to understand, for example, if you look at monitoring well 80 on this map that you presented to us last RAB meeting, 80 is outside of the plume. All right. Even though you had this data from -these data from September 2005, December 2005, and the date on this map was supposed to be December 2005, and you asserted to us this was still accurate last July, yet this monitoring well, 80 wasn't in the plume, nor was monitoring well 90 or 89. I mean, this is a complete demonstration by itself right here that the map that you've been briefing for us on was not accurate as compared to the information, the data that you had.

So I don't mean to be perhaps going after something that you all I know consider to be unimportant but it's important to us. We expect the information you provide to us to be accurate and up to date. And it does seem to me that you do take whatever steps you can to try to make yourselves try to look good and to cover over and gloss over the very concerning factual information about what the levels actually are and where the plume, at least the data tend to indicate, actually is. Your credibility is not terribly high here.

MR. ANDERSON: Well, I hope you've all seen and picked up the new map that we derived from our recent geoprobe sampling that is even better than the one we had before. Again, we strive to make sure our maps are as accurate as can be. And I think this new one will reflect fairly well the data we're reporting.

MS. MOORER: I would just like to have the record reflect the fact that after the last meeting, Co-Chair Konecky wrote a letter to Mr. Anderson asking again that the Kansas City District provide accurate and complete maps at each one of these RAB meetings. And you responded, Mr. Anderson, to Ms. Konecky in a letter dated October 10, 2006,

"The Army strongly disagrees with your assertion that we have briefing from outdated maps at the RAB."

451 MR. ANDERSON: Well, if you also recall, Ms. Moorer, we had other maps posted at  
452 the meeting that accurately represented the most current data, and we also briefed off of  
453 those. So we were using current data to brief from and, you know, had various maps we  
454 had posted such as over here, this aerial photo and other maps.  
455 But we will continue to make sure our maps are completely accurate and updated, and we  
456 hope you all can take a copy of the one that's in the back tonight.  
457  
458 MS. FRALEY: I have a question over here.  
459  
460 MR. ANDERSON: Yes, Larry.  
461  
462 MR. ANGLE: Larry Angle. Lower Platte NRD. Was SW12 or 13 sampled during the  
463 last go-around?  
464  
465 MR. ANDERSON: Brady, did you get that question?  
466  
467 MR. BIGELOW: I'm sorry?  
468  
469 MR. ANDERSON: SW12 and 13, were they sampled in this last sampling?  
470  
471 MR. BIGELOW: I'll look it up.  
472  
473 MR. ANDERSON: We'll get an answer here in just a second.  
474  
475 MS. KONECKY: Melissa Konecky. While we're on the maps, I notice this map, this  
476 new map, as far as the TCE goes, it didn't specify the level of TCE on the map. The other  
477 contaminants are specified, but it says, "Approximate area of TCE contaminated  
478 groundwater, concentrations greater than . . . to include 2006 data." I think that --  
479  
480 MR. ANDERSON: Yeah, that's a good catch. We'll make sure that includes it. It was  
481 just -- it was left off here. "Concentrations for the TCE contamination greater than" --



482 and it got chopped off. So yeah, we need to fix that. It's five. And we need to fix that.  
483 Good catch.  
484  
485 Okay. If we can scoot on ahead. All right. I know we've been saying for several  
486 meetings that -- you know, we've been talking about a surface water screening level now  
487 for the past probably three  
488  
489 RAB meetings, and we really haven't given you a very good answer on what that level  
490 might be. There was a process that the Army and the regulators were going through to  
491 try to derive a certain level so that folks could know if the levels in Johnson Creek were a  
492 threat to human health. What we did, the Army, EPA, and NDEQ independently  
493 calculated a screening level for surface water, completely independent, just to see what  
494 we would get. And again, these are preliminary screening levels that we're going to talk  
495 about tonight. These are not official action levels, they're not regulatory levels, but these  
496 are levels that -- what we wanted to do is take the most conservative assumptions that we  
497 could come up with and compare them to the levels that we see in Johnson Creek.  
498  
499 Now, the Army and the EPA used a similar risk-based approach with similar what I call  
500 exposure assumptions which I'll talk about on the next slide. But the big difference in the  
501 levels that the Army and EPA came up with had to deal with the toxicity level of TCE  
502 itself. NDEQ, they calculated a TCE screening level based on using the Platte River as a  
503 compliance point of, you know, five parts per billion and then determined what level it  
504 would have to be in Johnson Creek in order to come up with that particular level at the  
505 Platte River.  
506  
507 Now, you see these levels that we're using again for a screening level. The Army came  
508 up with -- and we'll talk mainly about TCE, because RDX was fairly high no matter who  
509 calculated it. So we'll concentrate on TCE. The Army came up with a level of about 448  
510 parts per billion, EPA, 16, and NDEQ, they had a range based on stream flow of 123 to  
511 265. Now, why is that important? I know everyone is going to zoom right in on the 16

512 level because obviously that's the lowest one. All the other levels seem quite a bit higher.  
513 And there's reasons for that.

514

515 Next slide, please.

516

517 MS. FRALEY: We have a question.

518

519 MR. ANDERSON: Yes?

520

521 MR. LUETKENHAUS: Lorus Luetkenhaus. Are you aware that there are children  
522 around this area here?

523

524 MR. ANDERSON: Yes, we are.

525

526 MR. LUETKENHAUS: And so you just make the levels for the adults and to hell with  
527 the kids; right?

528

529 MR. ANDERSON: No.

530

531 MR. LUETKENHAUS: No?

532

533 MR. ANDERSON: No.

534

535 MR. LUETKENHAUS: I didn't see anything on there about exposure risks for children.

536

537 MR. ANDERSON: We'll try to explain that as best we can. So bear with me for a few  
538 minutes and we'll --

539

540 MR. MARQUESS: I want to make just one point. EPA's -- the way EPA calculated that  
541 16 number -- and there's a memo on the back if you want to take a look and then we can  
542 talk about it probably in detail maybe at the next meeting -- but both the EPA and the

543 Army model assumed a child exposure. So those numbers of protective of a child  
544 exposure in the creek, or they represent risks associated with a child exposure.  
545  
546 MS. MOORER: Then can you explain why that note says –  
547  
548 MR. ANDERSON: That's a typo.  
549  
550 MS. MOORER: It says "based on adult exposure."  
551  
552 MR. ANDERSON: That's incorrect. Good catch, Lorus.  
553  
554 MS. MOORER: So actually the word "adult" should be child or children exposure.  
555  
556 MR. MARQUESS: That's correct.  
557  
558 MS. MOORER: All right. That's another important difference, isn't it?  
559  
560 MR. ANDERSON: It is. I'll just talk from over here because I'm sure I'll pass the mike  
561 back to Scott Marquess again before this slide is done.  
562  
563 May I have the next slide, please?  
564  
565 Both the EPA and the Army tried to use exposure assumptions that were extremely  
566 conservative to look at what we would consider a worst case in the creek. The various  
567 exposure factors that are considered in a risk assessment are, you know, incidental  
568 ingestion of water, if you're in the creek, you may swallow some water for whatever  
569 reason; skin exposure, and that's, you know, putting your hand or whatever skin in the  
570 actual water. And the assumption that we made is that half your body would actually be  
571 covered up, or half the individual's body would be covered by water. Now, the  
572 frequency, we assumed this person would go to the creek one day every week for ten  
573 years and would spend five hours in the creek with half their body immersed. And we

574 assumed a body weight of about 95 pounds. It's a standard body weight used for child  
575 exposure. Again, our exposure assumptions between the Army and EPA weren't exactly  
576 the same but fairly close. The big difference right now lies in what the Army and the  
577 EPA consider to be a toxicity factor. And this particular issue is being resolved at a  
578 national level between the Department of Defense and EPA. And whatever number the  
579 agencies determine is the toxicity factor of TCE, then that's the one we would use to  
580 calculate the number. And, you know, we have no choice in the number. Once it's  
581 decreed, that is the number, and that's the one we would use. And once that number is  
582 decided, then EPA's and the Army's values would be extremely close together. Right  
583 now there's about a 35 times difference in the toxicity factor that are out there.

584

585 MS. MOORER: Mr. Anderson?

586

587 MR. ANDERSON: Yes?

588

589 MS. MOORER: Lynn Moorner again. Do you have to share with us a memo somewhat  
590 equivalent to the EPA memo that goes through how the calculations and the assumptions  
591 were made in arriving at the Army's risk factor?

592

593 MR. ANDERSON: We have a draft memo. We're just finishing the review of that. We  
594 can certainly provide that in short order once we make sure that the right things are in  
595 there. But we wanted to share this at this meeting even though it's somewhat preliminary  
596 but it's close enough so we can at least have some values to compare with what's in  
597 Johnson Creek right now.

598

599 MS. MOORER: I do think that's important that you follow up and get us the Army's  
600 memo somewhat that covers roughly the same ground as EPA's memo which I found  
601 very interesting. The other thing being --

602

603 MR. ANDERSON: Yeah, in fact, that might be a great subject for the next meeting too,  
604 because we have -- what the Army -- the Army's memo that we'll be able to share here

605 soon actually looks at all the different derivations of the numbers between EPA, the  
606 Army and NDEQ, and it compares them and lays them out so you can see some of the  
607 things that went into coming up with that number. And we also have a more detailed  
608 analysis for those that really love to get into the risk assessment business, you know, a  
609 lot of the assumptions and factors that go into that.

610  
611 MS. MOORER: Then one other question. When you say DOD and EPA resolving at  
612 national level, who is it that decides? Is it not EPA that ultimately decides what that is, or  
613 are there still at the highest Level then two different agencies that are going to be fighting  
614 it out?

615  
616 MR. MARQUESS: I think it's more than DOD and EPA. I mean, there's -- how would I  
617 characterize it? It's more than just a DOD/EPA issue. It's a broader based issue, what's  
618 the toxicity of TCE. It affects everybody out there who's in the remediation business.

619  
620 MS. MOORER: My question is who decides ultimately what that factor is, or what  
621 agency decides it?

622  
623 MR. MARQUESS: Well, I mean, I can tell you what's in practice now. You know, EPA  
624 is basing our decision on the slope factor associated with the lower, the more  
625 conservative slope factor. And the way we do it is looking at a range, which is kind of  
626 what we're seeing here. But if we were deciding, you know, this site, some other site,  
627 pick a site, the decision we would make would be based upon the lower toxicity -- or the  
628 more conservative toxicity value for TCE.

629  
630 MS. MOORER: Mr. Anderson just indicated recently though in his explanation that -he  
631 gave the impression somehow that it's going to be decided here soon. And so my  
632 question is pretty simple. Who decides?

633  
634 MR. MARQUESS: I don't have an answer to that question. I don't know that "soon"  
635 would be a time frame either.

636

637 MS. MOORER: Well, actually, I think this question is to Mr. Anderson.

638 You're saying it's going to be decided. Who are you indicating is deciding it?

639

640 MR. ANDERSON: Well, that's way above both of our pay grades. I wish I could give

641 you a good answer when this decision will be made, but I really can't.

642

643 MS. MOORER: Well, Mr. Anderson, I didn't ask when. I'm asking you who? As far as

644 you know, who is the person who decides ultimately?

645

646 MR. ANDERSON: I don't know. I don't know who the ultimate decision --

647

648 MS. MOORER: Or the agency, which agency is the one that ultimately decides?

649

650 MR. MARQUESS: I can't answer that directly. I believe there are a number of federal

651 agencies that are involved in that decision-making process. It deals with --

652

653 MS. MOORER: And so they will achieve a consensus and the decision is announced?

654

655 MR. MARQUESS: Yes. And this is one that's already been in the works for some time

656 already.

657

658 MS. MOORER: Right.

659

660 MR. MARQUESS: It's a very important, difficult -- the NSF and NSDF, they're all --

661 OMB as well I would expect.

662

663 MS. MOORER: So you really don't have an answer for us?

664

665 MR. MARQUESS: As to who decides, no. As to how we will manage it, this is how we  
666 will manage it, and from our perspective, again, based on the more conservative toxicity  
667 value.

668

669 MS. SARAVALI: Rachel Saravali with UNL. I'm a grad student there. I'm curious to  
670 know if there's a cancer associated with RDX or TCE exposure or if this cancer slope  
671 factor is a range of different cancers?

672

673 MR. ANDERSON: You want to take that one? Go ahead.

674

675 MR. MARQUESS: I'm not a toxicologist, but I am staying at the Holiday Inn.  
676 The values don't relate -- the slope factor values don't necessarily relate to a specific  
677 kind of cancer if that's what your question is. Is that --

678

679 MS. SARAVALI: Are you talking about a cancer that might develop over the course of  
680 years --

681

682 MR. MARQUESS: The way we do risk assessment is over however long a period of  
683 exposure. So for this one it's a ten-year assumption. A lot of times we'll make it a  
684 residential, a 30-year assumption.

685

686 MS. SARAVALI: Is there a specific cancer that's associated with exposure to either of  
687 those two compounds?

688

689 MR. MARQUESS: I couldn't tell you that. I don't know the answer to that question.

690

691 MR. ANDERSON: Okay. And again, we look forward to an opportunity to explain this  
692 a greater detail. I think we'll have a lot more to talk about at the next one.

693

694 Finally, just to update, the quarterly report for June has obviously been disseminated,  
695 website, library. And the draft final 2005 annual report has also been published.

696

697 At this time we're going to talk about our expanded monitoring well network. These are  
698 the new monitoring wells we're installing along the southern perimeter and eastern  
699 perimeter of the site to increase our confidence that we're containing the plume. Again,  
700 there's no substitute for having real data to know who your plume is contained, so that's  
701 why we've committed to doing the expanded monitoring well network. In fact, as we  
702 speak, the drill crews have mobilized to the site and they're going to begin work here  
703 shortly.

704

705 At this time Lisa Tholl from URS will go through some of the details on the well  
706 network.

707

708 MS. THOLL: Good evening. I'm Lisa Tholl with URS. As Garth said, I'm a project  
709 manager at URS for the Mead site. We've been talking for quite a bit of time about  
710 expanding the monitoring well network to the east and to the south on the Mead site.  
711 And so basically I'm going to brief you tonight on all the new monitoring wells that we're  
712 planning on putting in this year. We are going to putting in wells that are going to consist  
713 of observation wells that are hydraulic containment data. We're going to put in  
714 monitoring wells, as we said, on the southern perimeter and the eastern perimeter. And I  
715 believe all the maps that are handed out tonight show all the proposed locations in red.  
716 So if you look on our legend here, it says "proposed monitoring wells." The monitoring  
717 wells as you can see are in red here to the east, to the south, and observation wells are  
718 going to be around our extraction wells. We put together the proposed expansion of the  
719 well system with the regulators. And what you see on the map is what we've all come to  
720 agree on is how we want to expand the network. The Army Corps is negotiating right  
721 now and has negotiated some land leases. That's why they've started to drill but there's  
722 still more that they're negotiating for all the proposed wells. And the Army plans on  
723 installing all these by the end of the year. Hopefully weather and access and all of that  
724 stays good so we can get all the wells in. And like we said, ECC is going to start drilling  
725 those as we speak.

726



727 The monitoring wells, as I said, we're putting in observation wells. The observation wells  
728 are going to go around existing extraction wells. If you remember, some of our  
729 extraction wells, which are all of our downgradient large pumping wells, they start over  
730 here (indicating) and then they work over EW1, EW3, all the way around the southern  
731 part of the site that are part of our containment system, some of the extraction wells have  
732 observation wells associated with them and then some of them didn't. And based on  
733 some input and we felt that we needed to add some more observation wells around the  
734 ones that don't have it, so the ones in red that you see around EW2, EW4, EW6, EW9 and  
735 EW11, there is going to be new observation wells that are going to be put in, about 30 of  
736 them total. There's about 70 observation wells, as I said, that already exist on the site  
737 around some of the extraction wells. Again, they're used to collect water level data so  
738 that we can monitor the performance of our extraction wells. As I said, some of them are  
739 instrumented, some of them aren't. And that's what we're going to be doing. Most of the  
740 observation wells that we're putting in are on university property but some are on private,  
741 but nearly all of them are on the university property. And as I said, they're in red on your  
742 map. We didn't number them because they're very close together around the extraction  
743 well, again, to collect hydraulic data to monitor the performance of that extraction well.

744  
745 Also part of our expansion of the well system, we're going to be putting in southern  
746 perimeter wells. We've heard lots of, do we have enough, where are any gaps that we  
747 might have. And so we have talking about for quite some time, we are going to be  
748 installing more monitoring wells on the southern part of the site. Right now we've got 36  
749 new monitoring wells that are planned. Again, they're to monitor the contamination, the  
750 plume, the movement of the plume in the southerly direction. We've already got about 35  
751 monitoring wells that already down the southern portion of the site. And when I say  
752 "southern portion," I'm talking all of this down here (indicating), all the red wells that you  
753 see down on the southern part of the site. That's again to monitor downgradient of our  
754 extraction wells and our containment system. When we put in the monitoring wells, we  
755 usually put them in as a cluster, just like Brady talked about in the trend analysis that you  
756 saw, shallow, intermediate and deep wells. Again, we're doing that. We're going to be  
757 putting in a cluster of wells, shallow, intermediate and deep. That's what's planned.

758 Sometimes we only put a shallow and an intermediate in, we don't end up putting in a  
759 deep one, but that's based on the geology. If we don't have enough sandstone to put a  
760 deep well in the bedrock, we won't put one in. So I say that that's what's planned, a  
761 shallow, intermediate and deep, but what actually goes in might be a little bit different.  
762 And we can talk about that after obviously all the wells are put in.

763

764 When the new wells go in, as standard practice, we sample them for four quarters for the  
765 first year, and then we evaluate the frequency of the sampling after the first year. So we  
766 sample for one year. I think one of the -- again, another area that we've heard a lot  
767 about, adding more wells, that we have a sufficient amount, really monitoring the eastern  
768 side of the plume. And I think we've got a lot of really good input from you, the public,  
769 on where you'd like to see some wells. We've also again worked with the regulatory  
770 agencies to come up with these locations. So our eastern boundary wells start all the way  
771 up here, MW102, that proposed location, and they come down all these red wells, all  
772 along the eastern side of the plume, all the way down here (indicating). Those are all the  
773 proposed eastern side monitoring wells. And there's about 48 monitoring wells. So if  
774 you look at this plume, you look at -- some of the black wells that are in black, like  
775 MW46, those are already existing. And if you look to see where all the new proposed  
776 wells are, then we've really got a lot of wells on the eastern side that are proposed. And  
777 those are also the ones that are going to be put in this year.

778

779 Again, to monitor the contamination on the eastern side of the site, we've already got  
780 about 30, as I said, existing monitoring wells on the eastern part of the site as well as a lot  
781 of residential wells that we sample on the eastern part. Again, all those wells will be  
782 sampled quarterly for the first year and then we'll evaluate whether we're going to  
783 continue to -- what kind of frequency to continue sampling them on.

784

785 MS. KONECKY: Excuse me. Melissa Konecky. Who's paying for those wells?

786

787 MR. ANDERSON: These are also our wells. Again, our responsibility is to monitor our

788 plume to make sure that we keep it contained no matter what outside influences there  
789 might be. So we would put these in regardless of any other event that might be  
790 happening outside the project or that could affect the project.

791

792 One thing I want to clarify from Lisa's presentation, that we will always monitor these  
793 new wells on -- we're never going to stop monitoring these wells. Just that you know, it's  
794 standard practice to always start with the quarterly when you install them and then  
795 evaluate the frequency after that. But we will always continue to monitor them. We'll  
796 never stop as long as the plume is still there.

797

798 MR. LUETKENHAUS: Lorus Luetkenhaus. How many monitoring wells is MUD  
799 going to put in on the eastern side?

800

801 MR. ANDERSON: We're still assisting Omaha in the oversight of the development of  
802 their well network. The number right now is still undetermined, but they will be  
803 proposing their well network soon, and we'll assist the Omaha District in evaluating that  
804 network.

805

806 MR. LUETKENHAUS: I've got a note here from December 1st, 2004, two years ago.  
807 And MUD feels that additional monitoring wells should be installed to monitor  
808 groundwater east of the NOP plume and has offered to fund their installation."

809

810 I'll say I'm glad that -- what you're doing is beautiful. But let's let them help us out a little  
811 bit.

812

813 MR. ANDERSON: Well, you're stealing my thunder. I was going to talk about that a  
814 little bit later.

815

816 But the way we're looking at monitoring of this plume, there's actually two lines of data  
817 that we're collecting. And the line that we have next to the plume, the primary emphasis  
818 is for chemical data. MUD will be installing a certain number of wells further out that

819 will be sampled for chemical. But their main purpose is to evaluate the hydraulics and  
820 the influence of the MUD pumping. And that's about all I can say about that. But the  
821 wells they put in for the purpose of the permit will be on their own nickel.

822

823 MS. WAGEMAN: Lynda Wageman. You had mentioned, Lisa, that you're going to be  
824 testing these wells quarterly on the eastern side of the plume as well as on the southern  
825 side of the plume, and how it's still undecided on how often you're going to check after  
826 that.

827

828 MR. ANDERSON: I addressed that a couple minutes ago. To clarify that, yeah, we  
829 always start quarterly. I mean, that's the default amount that you sample these wells.  
830 And after a year, standard practice, every well on here, we evaluate ever well, every year.  
831 We look at trends, we look at the past frequency, and we determine if we need to  
832 continue sampling quarterly. And most likely yeah, we'll continue to sample these  
833 quarterly.

834

835 MS. WAGEMAN: Sounds great, Garth. Here's the deal. I'm monitoring what you guys  
836 are monitoring. So when you say you go in and you've checked 24 monitoring wells,  
837 you're not checking 24 monitoring wells. I go in and I review your script and your  
838 verbiage and your summaries and I'm going in and I 'm checking well by well by well.  
839 And if you're checking -- you make a statement that you're testing 24 wells, you're not.  
840 You've checked 12 to 13 wells, but a number of those wells you've checked more than  
841 once and they've got duplicate readings. However, when you go in and you're reading the  
842 summary, you know, the summary that the other regulators read, the information that you  
843 give the senators, the data that you provide everybody else, you know as well as I do that  
844 they're not going in double-checking your work. I'm the only one who's doing it. I want  
845 to know why the information and the data that you're provided in your summaries are  
846 misleading. If you're going to test 24 monitoring wells, my expectation is that you test 24  
847 monitoring wells. If you are going in and you are running duplicate samples, I expect  
848 you to say, we tested 13 monitoring wells, the balance of which we tested X number of  
849 times. Once in a blue moon -- and this has been going on since, let's see, 2004 -- every

850 now and then you will make that statement, but that is a rarity, and you'll use it for maybe  
851 one or two examples. But what you are providing is incorrect. This is my concern. And  
852 I'm going to reiterate it again and again and again. MUD is building a well field. You've  
853 got slop you are responsible to take care of. If you can't, we'll go over your head. As far  
854 as these monitoring wells that you plan to be testing whenever, I guarantee you that  
855 someone is going to be double-checking your work, as I have been since you've started  
856 monitoring these wells, and I will be turning this data in as I intend to do if you do not  
857 protect the public. The work that you have done in testing these monitoring wells has  
858 been nothing short of substandard. I expect you to do a better job.

859

860 MR. ANDERSON: We stand behind the data, and we're glad that people are checking  
861 our data.

862

863 MS. WAGEMAN: That's great to hear that you're standing behind the data, but you don't  
864 have enough data. And you're telling people, I'm checking 24 wells. You're not. So  
865 Garth, it's me you're talking to. It's not anybody else. So spare me the spin, darling,  
866 because I'm going through your data. You checked 24 monitoring wells. I expect 24  
867 monitoring wells to be checked. I don't expect 13 wells to be checked with the balance  
868 going twice when you're saying in your summary that you're checking 24. If I did that in  
869 my job, I would be fired. I spent the last three days locked in a conference room with my  
870 CEO going through objectives for 2007. If I pulled a stunt like that with my boss, I'd be  
871 fired. I don't know why or how you guys are getting away with what you're getting away  
872 with, but it's going to stop, period. So when it comes to these wells on the east side, you  
873 are involving my family, my house, and me as a person. Change the way you check these  
874 wells.

875

876 MR. ANDERSON: Okay. Thank you. We need to stop for just a second. We need to  
877 do a tape change. So if you want to take a break to grab another coffee or a bottle of  
878 water, we'll resume in about five minutes.

879 (8:00 p.m. - Recess taken)

880 (At 8:05 p.m., with all parties present as before, the following proceedings were had, to  
881 wit:)

882

883 MR. ANDERSON: Let's get started again.

884

885 A question was asked whether we sampled surface water points 12 and 13 in our June  
886 sampling event. We did sample 12, but we did not sample 13. I have the results for 12.  
887 And in the June event, for TCE it was 1.77. And that level seems to be fairly steady over  
888 the past year. And we've had a range from .84 all the way to 1.77. If anybody would like  
889 a copy of this graph, we can make a copy of it and give it to you before we leave tonight.

890

891 MR. MARQUESS: I want to address -- Ms. Moorer had a question about who decides  
892 the toxicity slope factor TCE. I believe that's an EPA decision ultimately, but it's also a  
893 decision that will be widely vetted among many governmental agencies. And again, I  
894 don't believe "imminent" would be the timeline for that.

895

896 MR. RANDAZZO: Paul Randazzo. We were talking earlier about you guys are going to  
897 sample the new wells four times for the first year. I guess my question would be, or my  
898 statement, in the past we've kind of had the luxury as audience participants or RAB  
899 members to have audience participation. And I'm sure you guys will make the decision  
900 as far as how often to monitor the wells. But I would like to publicly ask that we have  
901 some input regarding that. So you're saying you want to do it once a year. And I'm  
902 looking at the new well, 116, for instance, which is right on that point down at the  
903 bottom. You may say you only want to sample that once a year or once every two years,  
904 and I might say, well, because that's an area where the computer models showed that  
905 there was going to be a break in containment, which I know I'm the only person in the  
906 room that thinks that it might break containment, however, I might want that sampled  
907 more often. And would you guys at least listen to the suggestion?

908

909 MR. ANDERSON: Paul, I think you're right on in that probably the area of the greatest  
910 risk is right here (indicating). And this would be certainly an area that we'd be most

911 concerned about. Up here (indicating) maybe not quite as much. But what we would  
912 offer to do is at the appropriate RAB meeting, because we develop an annual sampling  
913 plan that we'll talk about the next calendar year, once we developed that plan or have a  
914 proposed plan for the sampling for the following year, and we would certainly present  
915 that to the RAB for some input.

916

917 MR. RANDAZZO: And if you'll remind me, with all of those computer samples, you  
918 know, with all these different factors -- when it broke containment when it did, wasn't it  
919 down close to the tip?

920

921 MR. ANDERSON: It was right here where it makes a turn south. It wasn't down here.  
922 It was right in here (indicating). It's almost like a -- what you do is you track a particle of  
923 water as it travels down this way (indicating). And this was about the only place under  
924 the most extreme conditions that it showed any potential of breaking containment. That's  
925 what we would be most concerned about as well.

926

927 And that's a great lead-in to --

928

929 MS. WAGEMAN: One more question,  
930 Garth. Sorry, Garth. This has nothing to do with those.

931

932 Lynda Wageman again

933 About a year and a half ago, Scott, I had talked to you about something that concerned  
934 me, which was vapor intrusion. I have just been passed a document from Lynn regarding  
935 some possible -- I don't want to call them concerns -- but some things we might want to  
936 look at regarding vapor intrusion. I know that, you know, right now they want -- I think  
937 it's currently sitting at five micrograms I think is what's considered dangerous, and now  
938 they want to take it down to .02 micrograms. I can show you the article. But this is  
939 something also that we really need to think about absolutely. Monitoring wells are great,  
940 as I've discussed with Scott in the past. We've come leaps and bounds since 2004 getting  
941 those monitoring wells and the money to make that happen. And I'll be the first person to

942 acknowledge that. But we also have to recognize the area of the country in which we  
943 live. We do have a rural population, and some of these homes such as my own are a  
944 hundred years old. Some of these homes do not have concrete basements or just a partial  
945 concrete basement or there could be cracks in the basement foundation. And when that  
946 occurs, as you all know, you're going to run the risk of vapor intrusion. This is  
947 something -- the plume does not have to be on top of you in order for you to get hurt. It  
948 doesn't have to be close to you for you to get hurt.

949

950 When I was speaking with Scott about a year and a half ago, we had discussed this, and  
951 we also talked about some of the varying types of technology that might be out there to  
952 assist the people in checking for this. And I want to know -- it's obviously on your plate.  
953 I know it's on your plate. I've got the doc, which is good. I want to know specifically  
954 how important you think this is at the current time, what you intend to do to protect the  
955 people of this area, when you're coming out to my farm to check my dirt floor basement.  
956 What are you going to do? Or have you given that any thought? And how are you going  
957 to weigh the lack of regulatory standard to this up against your responsibility as the  
958 Army and as human beings?

959

960 MR. ANDERSON: Well, I don't know if I can answer every one of those questions. The  
961 first one, yes, we are concerned. That's why we do have it on our radar screen currently.  
962 We're working with EPA now to develop some sampling and some field work to measure  
963 vapor intrusion in the area. We haven't gotten to the point of finalizing any work plan  
964 yet, but we certainly intend to do some type of field work so we can assess how vapor  
965 intrusion does affect the area.

966

967 MS. WAGEMAN: What type of testing do you plan to be doing?

968

969 MR. ANDERSON: I'm going to turn it over to Lisa Tholl who wrote some of the work  
970 plan. It's an internal document right now, but she's very familiar with a lot of issues  
971 relative to vapor intrusion.

972



973 MS. THOLL: I'll preface this, Lynda, by saying I'm not a vapor intrusion expert. But  
974 one of the experts actually in vapor intrusion that works for URS was actually the  
975 primary person in helping develop, like Garth said, a preliminary work plan to go out to  
976 the Mead site and collect samples to help us answer a lot of the questions that you're  
977 talking about.

978

979 MS. WAGEMAN: What's that person's name?

980

981 MS. THOLL: His name is Bart Eklund, E-K-L-U-N-D, He is in our Austin, Texas,  
982 office. And I think probably if you Google or search anything related to vapor intrusion,  
983 you will see a lot of papers that he has coauthored on vapor intrusion. He's done a lot of  
984 national conferences and speaking on vapor intrusion. So again I'll preface, I'm not the  
985 vapor intrusion expert, but I'm happy to try to answer some of that.

986

987 Like Garth said, we have a preliminary work plan right now that's on our plate. And if  
988 you're familiar with kind of how vapor intrusion evaluation is done, it's done in a stepped  
989 approach. Bart Eklund has actually come up to the site with me and done a preliminary  
990 review of the site.

991

992 MS. WAGEMAN: Was this a visual site? When you say he's done a preliminary review  
993 of the site, was he reviewing a visual like EPA did down at Camp Ashland or was it  
994 something with data? Did he have his meters? What was -- what did he do?

995

996 MS. THOLL: When you look at vapor intrusion initially at the site, you don't  
997 immediately go in and start sticking a meter in First off, he had never been to our site  
998 before. He had seen maps. He had seen that map, actually, many of those maps up there  
999 where the ground contamination is, all the data that we have. He and I came to the site  
1000 and we looked at just visually -- went around the site to see what kind of structures are  
1001 overlying and adjacent to the plume. He wanted to see, you know, some of the ages --  
1002 look at some of the buildings to see how old they were. We only went into a few of the

1003 university buildings. This was not to go in to immediately and definitively define ever  
1004 residential home and assess every type of basement foundation or lack of or cracks --  
1005

1006 MS. WAGEMAN: How far outside the plume did you go? You're talking about you  
1007 went into the university, which means that you're on the university property, which  
1008 means you're actually on the plume. But I know enough about vapor intrusion to be  
1009 dangerous. So you and I are kind of in the same boat here. But I can place a phone call  
1010 and learn. But how far out? When you did the visual and he did some stuff, you didn't  
1011 come to my house.

1012

1013 MS. THOLL: You're right. And this was just -- when you come onto a new site, if I  
1014 was a person that had never seen the site and I looked at that map, I wouldn't have any  
1015 idea if there was topography, if there were trees, if the buildings were two-story or one-  
1016 story. I'd have no idea. So literally the first thing is we did a drive around the site. We  
1017 started from the north, went all the way down to the south. We literally went all the way  
1018 over here on the bluff road. We went over here to this area. We went to the water ski  
1019 lake and looked at that area. We literally did the whole site. And again, it was just a  
1020 driving tour. We got out. And again, we didn't call ahead to look at any particular  
1021 buildings, because he was just trying to get a lay of the land.

1022

1023 MS. WAGEMAN: Did you turn around and actually look at everything within the one-  
1024 mile buffer or was it more specific; I mean, you'd go here, here, here (indicating)? I  
1025 mean, if it were me and I were taking him out and it was his first visit, I'd say, look, look  
1026 at the plume, isn't it nice, this is the one-mile buffer, get in the car, don't smoke, You  
1027 know, and I'd show him around. Is that what you did?

1028

1029 MS. THOLL: Essentially, Lynda, yeah, that's what we did. I tried to show him on the  
1030 site essentially where all the residents were, what kind of university buildings were still  
1031 here, how they used some of those buildings, and literally just kind of drive around, see  
1032 farms, see houses, see the water ski lake, see the NRD reservoir. We did that. what I  
1033 had done was also tell him again -- I used to sample all these wells, not the one-mile

1034 buffer but the ones that were originally on part of the water supply sampling system. I've  
1035 been in a lot of those houses. I know which houses have block foundations, which ones  
1036 have concrete foundations. So I specifically only spoke to him with information on  
1037 those houses just to give him an idea. He could see a farm house, he'd say, what about  
1038 that place, have you ever been in that. I'd say yes, I've sampled the carbon unit in that  
1039 house, it has this kind of foundation, it has a concrete floor. That's as basic as we did.  
1040 And that's all he wanted to know firsthand. Then what he does is he looks at the plumes.  
1041 And then what we did, we went back to the office, and on the aerial photographic map we  
1042 saw the plume --

1043

1044 MS. WAGEMAN: Which plume map did you show him?

1045

1046 MS. THOLL: We did this one right here (indicating) with all of that direct push data  
1047 that we had just done and it was published in our data summary report. We looked at that  
1048 map. And we didn't look at just all the recent, we looked at historical data as well. And  
1049 then we just started putting circles around all the of the structures that overlie the plume.  
1050 Again, we looked at TCE plumes, not the RDX, just the TCE plumes. And then we also  
1051 started circling houses that lie away from the plume as well. And I can't tell you an exact  
1052 distance. I don't know. But, you know, did we look a couple miles away? No, I can tell  
1053 you that much. But we looked at what lied over the plume and what was on the edge of  
1054 the plume. And then he said, what is that building used for, is that a house? I'd answer  
1055 yes or no. Is it a commercial building? Is it a university building? How do they  
1056 typically use that building.

1057 MS. WAGEMAN: The functionality.

1058

1059 MS. THOLL: Exactly. That's the first screening that we do when looking at a site.  
1060 That's the only thing we do, is circle the buildings that lie over the plume and adjacent to  
1061 the plume, are they residential, we guess -- just preliminary we guess on age. Again, just  
1062 all preliminary. It's not something that we would do definitively looking at age,  
1063 construction, nailing it down for everyone until we actually went out and did a full  
1064 assessment. So again, preliminary. And that's what we did our work plan based on. So

1065 it's a tiered approach. basically you look at residences or buildings that lie over the  
1066 plume and what's the concentration. Immediately if they fall out with concentrations  
1067 goes, that's a building you would want to potentially look at. Then for vapor intrusion,  
1068 you don't immediately go out and collect indoor air samples. The next step is, do you  
1069 have any vapor or soil gas samples adjacent to those buildings. And we looked at the  
1070 data. All the soil gas that we have for the site was done in the RI, the OU2 RI, which is a  
1071 1992. o we basically say --

1072

1073 MS. WAGEMAN: Stop. Did you do surface samples? Did you -- you know, exactly -- I  
1074 mean, did you just say, oh, here's dirt, and then pick it up and show him? I mean, what  
1075 did you do here?

1076

1077 MS. THOLL: We did in-situ soil gas. So we basically send a probe down to the  
1078 subsurface, vacuum the soil vapor out and do a screening of that. That's what we did in  
1079 the RI. But it was a different purpose. We were looking for source areas and all. So  
1080 when he said, well, we got data from 1992, it's not around in the general areas where a lot  
1081 of these residences are and buildings that are used. So really the next step is to collect  
1082 soil gas samples adjacent to the buildings that are of concern.

1083

1084 So that is literally how the preliminary or -- and the regulatory agencies have not seen  
1085 this work plan. It's in the Corps for review. So the next step that we say is we need to  
1086 collect some soil gas samples, and then we move on from there.

1087

1088 MS. WAGEMAN: You're saying "next to the buildings of concern." And I would take  
1089 on the assumption, and I think it's a very reasonable assumption, that at first pass the  
1090 buildings of concern are going to be the ones that are situated directly on top of or  
1091 immediately adjacent to in the matter of a hundred feet of the plume.

1092

1093 MS. THOLL: Correct.

1094

1095 MS. WAGEMAN: Okay. My concern is this: The vapors are very unlike water. They  
1096 go all over the place. And you may have -- if she is in this house and I'm the plume, I  
1097 may not go there, I might go there, and I might go three times as far and never go here  
1098 (indicating). And so I think that's great that you're doing that. I'm really glad to see this  
1099 finally happen. But my concern here is is that I don't want to see the Corps or URS  
1100 treating vapor intrusion in the same manner that they're going to treat groundwater  
1101 contamination. And I certainly don't want them to take a laissez-faire, lackadaisical  
1102 approach to this.

1103

1104 So what do you need from us as a community to help maybe expedite the process or  
1105 gather data for you? Because there are people out here that have cracks in their  
1106 foundations, not just, oh, we have a concrete foundation, but if you've got cracks, we've  
1107 got a serious problem.

1108

1109 I remember Lenny Segal telling me, Lynda, you better watch for this and you better  
1110 watch for it well. So I gave him my word that I would be all eyeballs on this stuff. So  
1111 now I'm all eyeballs.

1112

1113 The next step here is to do some soil gas samples. They haven't seen it yet, so obviously  
1114 there's not a date set. But what comes after the soil gas samples? Do we know or is that  
1115 still up in the air, a projected time frame, a year out, what?

1116

1117 MS. THOLL: I don't know what the actual date past the soil gas sampling is. I  
1118 couldn't tell you.

1119 MS. WAGEMAN: Do you know, Garth?

1120

1121 MR. ANDERSON: Well, I have to admit that vapor intrusion for a lot of us is uncharted  
1122 territory, and we're learning as we go. Fortunately we're blessed with having a national  
1123 expert on the team who can guide us through the process.

1124

1125 MS. WAGEMAN: Who's that?

1126

1127 MR. ANDERSON: Eklund, the guy we just talked about. He's an employee of URS. So  
1128 we're extremely fortunate to have him under contract.

1129

1130 MS. WAGEMAN: Thank you.

1131

1132 MR. ANDERSON: You're welcome.

1133

1134 MR. MARQUESS: You want to make that an agenda item --

1135

1136 MR. ANDERSON: That probably won't be ready for discussion in January. Perhaps the  
1137 April RAB meeting would be about when we're ready to talk about it.

1138

1139 MS. MOORER: Lynn Moorer. Mr. Anderson or Ms. Tholl, do you know, what does the  
1140 1997 ROD provide with respect to vapor intrusion?

1141

1142 MR. MARQUESS: I don't believe that's been addressed.

1143

1144 MS. MOORER: I have -- the latest version of the site management plan that I have seen  
1145 DEP files indicates that the five-year review will be happening beginning in July of 2007  
1146 and concluding in October of 2007; right?

1147

1148 MR. ANDERSON: Correct.

1149

1150 MS. MOORER: All right. And I also have seen this draft U.S. Army's vapor intrusion  
1151 policy that states that if an existing circle ROD does not evaluate potential vapor  
1152 intrusion risks and volatile constituents that exist within a hundred feet of an existing  
1153 building, these risks will be evaluated as part of the CRCLA five-year review. So the  
1154 question is, are you going to have this fully addressed, vapor intrusion all throughout the  
1155 site, fully addressed by October of 2007 as a part of concluding your five-year review?

1156

1157 MR. ANDERSON: Well, the first part you are correct in that the purpose of the five-  
1158 year review is to identify new -- you know, changes in the site, effectiveness of a remedy  
1159 or any new potential exposure pathways. The five-year review does not completely  
1160 address the mitigation of a new pathway, it merely identifies it and sets the wheels  
1161 forward for actually doing the work and the mitigation of that particular risk.

1162

1163 MS. MOORER: So let me restate my question. Will the risks be fully evaluated, which  
1164 it says your policy is, fully evaluated as a part of this five-year review so that when the  
1165 five-year review is done, we'll all be a whole lot more informed because you will be  
1166 thoroughly done with your assessment of the risks of this site?

1167

1168 MR. ANDERSON: We will have identified vapor intrusion as a new pathway. Will it be  
1169 fully evaluated by then? No.

1170

1171 MS. MOORER: Which does not appear to be consistent with the Army's draft policy.

1172

1173 MR. ANDERSON: Well, just the sheer time frame of addressing vapor intrusion, again,  
1174 new science, it's a new area that there's just -- it's just too short of a time frame to  
1175 completely address and mitigate this particular risk. Are we looking at it? Yes. Are we  
1176 starting the wheels in motion to address it? Yes. In fact, we're doing it even ahead of  
1177 completion of the five-year review, because we've already -- we're aware that it is a new  
1178 risk that needs to be addressed.

1179

1180 MS. MOORER: Does the Army in any way deny liability and responsibility for vapor  
1181 intrusion risks for the people at the site?

1182

1183 MR. ANDERSON: If it's a risk from a DOD contaminant, then obviously the Army  
1184 takes responsibility for it.

1185

1186 MS. MOORER: Thank you.

1187

1188 MR. ANDERSON: Now, I'd like to talk bout the response action process. It's been a  
1189 fairly popular topic over the last year.

1190

1191 Slide, please.

1192

1193 Let me start by saying we have a process that's just about finalized called containment  
1194 evaluation. Containment evaluation, as we've discussed before, is going to be a  
1195 comprehensive evaluation of the system performance to ensure that the contaminated  
1196 groundwater plume remains contained and the system is doing exactly what it's supposed  
1197 to do. And to do this, we have a work plan that's just about final that talks about how we  
1198 collect monitoring data and how we evaluate it, chemical and hydraulic data, we look at  
1199 operations and maintenance, and we use our groundwater model as a tool to give us a  
1200 holistic assessment of the system performance. Now, you can't look at any one particular  
1201 data point to get an overall assessment of the system. That's why we want to do -- we're  
1202 doing a comprehensive containment evaluation, so we've looked at everything in, you  
1203 know, one big snapshot.

1204

1205 Slide, please.

1206

1207 Now, in the unlikely event that we would have to actually put in -- you know, put into  
1208 action some type of response, what would actually trigger a response? Why would we  
1209 even need to start anything? Well, that's a question everyone wants to know.

1210

1211 Now, first of all, do we have site related contaminants that are above the action level  
1212 that's outside the known extent of contamination? And, of course, when we talk about  
1213 the known extent of contamination, we're talking about what we see on the map. If we  
1214 see things that are above the action level, you know, out here, then yes, we have to  
1215 initiate some type of response.

1216

1217 Do we see site related contaminants outside of our hydraulic capture zone? Our  
1218 hydraulic capture zone extends roughly here (indicating), but if we see things that are



1219 outside that are not being contained, then yes, we would obviously have to initiate some  
1220 type of response. Or is there an imminent threat to a water supply? If we answer any of  
1221 these questions, then yes, we would have to address that in some type of response.

1222

1223 Slide, please.

1224

1225 We've talked for a while about a three-tier process of evaluating a risk -- or evaluating the  
1226 necessity for a response action. Our first tier is to confirm it. If we see a piece of data  
1227 that possibly meets one of those criteria, well, the first thing we're going to want to do is  
1228 make sure that that's a real piece of data. Second tier is go and investigate it; what's  
1229 going on here? We need to diagnose the problem; we need to determine why this  
1230 particular piece of data is what it is, you know, is there some underlying problems or  
1231 something that we need to understand, you know, in that area around that particular piece  
1232 of data. And then if there is some type of action needed, some type of physical response,  
1233 then that would be the escalation to tier three. And I'll go into these tiers in a little more  
1234 detail.

1235

1236 It's important to emphasize that if a water supply well, any kind of drinking water supply  
1237 well gets contaminated above action levels, the absolute first thing we do, no questions  
1238 asked, we supply alternate water supply to the residents, whether it's bottled water or  
1239 some type of carbon filtration unit.

1240

1241 In fact, just this week we have a resident who was on a carbon filtration. There were  
1242 some maintenance problems with the unit, we had to take it off line, and ECC had bottled  
1243 water to them within a couple of hours. So that's how quickly we can respond with  
1244 bottled water.

1245

1246 Slide, please.

1247

1248 In order to talk about response actions, it's important to put it into context of, you know,  
1249 how fast groundwater actually moves on the site. And that dictates how much time we  
1250 actually have to respond in developing our plan.  
1251

1252 First of all, groundwater velocity at the site on average moves from northwest to  
1253 southeast at about two feet per day. Some places it may be a little slower, some places a  
1254 little bit faster, but on the average for a planning number, two feet per day is pretty good.  
1255

1256 Contamination, however, moves a little bit slower because of a lot of factors, generally  
1257 about 75 percent as fast as the groundwater would move. It doesn't necessarily move  
1258 with the groundwater; it gets held back by the soil matrix and other factors, it gets a little  
1259 bit diluted, so it doesn't quite move as fast as the groundwater. But on the average on the  
1260 site, about a foot and a half per day across the site.  
1261

1262 It's also important to know that groundwater, just as if it were flowing in a river, it wants  
1263 to go downstream; it wants to flow with the groundwater gradient. And this is the natural  
1264 gradient. This is just like a really, really, really slow river. Groundwater doesn't want to  
1265 go this way, it wants to go this way (indicating). So when we talk about groundwater  
1266 moving, it's always in this direction (indicating). Any other direction it's going to be, you  
1267 know, a fraction of that speed if there's some other type of influence out there.  
1268

1269 So when we're looking at these response actions, you need to put that in context of how  
1270 fast the groundwater and contamination actually moves, just as an example, from about  
1271 here to the Lincoln well field, to the nearest well, probably about three miles. And if we  
1272 turned off the extraction well today and just let the groundwater go, it would still take  
1273 nearly 30 years for it to reach the Lincoln well field. But we're not going to turn off the  
1274 well, we're going to keep it contained, you know, to prevent it from going any further  
1275 south. Tier one, again, we got ROD contaminants, the DOD contaminants above an  
1276 action level, at a single well. Whatever well it might be, we go out and we sample. We  
1277 might -- say we found a hit somewhere, and it could be anywhere outside of our known  
1278 extent of contamination -- if it's above action level, the first thing we want to do is we

1279 want to go out and resample it. We have to make sure that that's a real piece a data and  
1280 that nothing weird is going on, nothing screwy. Occasionally the lab screws up,  
1281 occasionally the sampling people screw up. But, you know, those things happen. We  
1282 would want to make sure it's a real valid data point. And we would put that particular  
1283 well on a quarterly sampling program for two years to make sure this is in fact a real  
1284 thing going on and not just a -- you know, we want to be confident that we understand it.  
1285 And along with that quarterly sampling plan, we would want to sample all adjacent wells  
1286 as appropriate. If there's a nearby monitoring well, water supply well, what have you,  
1287 we'd also want to put those on a sampling program to better understand what was going  
1288 on out there. So once we -- if we confirm that that a real hit, a real data point that we  
1289 need to be concerned about, we would escalate to tier two. In other words, we would go  
1290 to tier two if we repeat the detection, say we got a hit of six of TCE outside the known  
1291 extent of contamination, we'd go out and resample, and the next time we get to 6.5, well,  
1292 that tells us that's probably a real piece of data now, and that would cause us to go to the  
1293 next tier to find out what's going on. Do we have other wells nearby that are above action  
1294 level? You know, we go out and resample the first one; yeah, we got a hit. We go to the  
1295 well, just, say, upgrading of it, and it's one of those outside the plume, and it has a hit  
1296 too. Well, that tells us there's really something going on and we would go to the next tier.

1297

1298 Question in the back.

1299

1300 MS. KONECKY: Why is that so high? I mean, why is the TCE or RDX greater than  
1301 25 parts per billion? I mean, why isn't this more like six or eight?

1302

1303 MR. ANDERSON: That's a good question. This is kind of an arbitrary number. What  
1304 it's intended to illustrate, that if we got a hit that was way above action level, we would  
1305 immediately go to tier two and we would probably skip a lot of this stuff to repeat  
1306 detections, we would go straight to the next tier of investigation.

1307

1308 MS. KONECKY: So are you saying really that that's not going to be the case, that it  
1309 won't have to be as high as 25 as opposed to like six or eight?

1310

1311 MR. ANDERSON: Well, six or eight is barely above the action level. It's of concern.  
1312 You know, we obviously would go out and try to replicate that data sample. But it's so  
1313 high -- if we get a hit at 25, then we probably need to take a little quicker action and not  
1314 wait for a lot of this other stuff to happen, but we would want to go out and immediately  
1315 go to tier two.

1316

1317 MS. KONECKY: When you mentioned the bottled water that you guys got so quickly  
1318 for someone, like they can't shower in that; right?

1319

1320 MR. ANDERSON: No. The first concern is always drinking water. You know, there's  
1321 no questions asked. We send our guys out to a convenience store and get a couple of  
1322 cases of just regular bottled water until we can get their system back on line so they're  
1323 not consuming contaminated water.

1324

1325 MS. KONECKY: How long would they have to go then before they could have their  
1326 own shower, you know, without breathing the steam?

1327

1328 MR. ANDERSON: Brady, how quickly did we get the GAC system back on line for that  
1329 one resident?

1330

1331 MR. BIGELOW: We just moved over to the other tank. We have two tanks installed at  
1332 the houses. So we switched to, I guess it would be the lag tank, so it's still going through  
1333 the carbon system, and we'll bring the other one in and we'll be back at two again. So  
1334 the water is going through a GAC system right now or one of the carbon units, and we  
1335 gave them the drinking water, and then we'll go back out and put that other tank back in.

1336

1337 MR. ANDERSON: It's a redundant system. It goes through two filters. So the  
1338 showering one, they were still running through a GAC relatively quickly.

1339

1340 MS. KONECKY: Did you mean within hours then or --

1341

1342 MR. ANDERSON: As far as the tank switch over, that happened within how long?

1343

1344 MR. BIGELOW: A day.

1345

1346 MR. ANDERSON: And this is obviously a house that already has a system in place. I

1347 was just illustrating how quickly we would furnish bottled water. If it was a new well

1348 that had a hit, obviously our first concern is to make sure they're not consuming

1349 contaminated water.

1350

1351 And if I could move to next slide, I can show you some time frames for getting other

1352 stuff in place.

1353

1354 Tier one time frame, obviously it's highly dependent on the sampling results what your

1355 next step would be. It takes 60 to 90 days to get the first validated results back. So once

1356 we get the validated results back, then the very next sampling event we'd be out there

1357 again sampling.

1358

1359 Again, we would to go Tier two immediately upon reaching the criteria we talked about

1360 in the previous slide.

1361

1362 Now, again, talking about alternate water supply, bottled water in less than a week --

1363 well, actually less than a day. When we talk about permanent bottled drinking water,

1364 we're talking more the five-gallon water cooler type from Culligan or whoever our

1365 vendor is, more of a permanent one, not just cases of half liter bottles.

1366

1367 MS. KONECKY: But you're not talking about like the showering --

1368

1369 MR. ANDERSON: No. It takes a little bit longer to get a carbon filter installed because,

1370 u know, we have to contract with the vendor and have them come out and re-plume the

1371 house in order to do that.

1372

1373 MS. KONECKY: So the logistics for the people would be that they'd be  
1374 inconvenienced then or they'd have to go to their neighbors and --

1375

1376 MR. ANDERSON: Well, perhaps. And, you know, I'm sure if it was -- and we would  
1377 certainly evaluate and get a carbon filtration system in as quickly as we could.

1378

1379 MS. KONECKY: Well, I just wanted to get this clear in my mind then that your actual  
1380 procedure is to wait until the TCE and the RDX is greater than or equal to 25 PPB.

1381

1382 MR. ANDERSON: No. Any time a water supply well is over the drinking water  
1383 standard of five for TCE or two for RDX, that resident would immediately get bottled  
1384 water.

1385

1386 MS. KONECKY: Well, I didn't get why the 25 --

1387

1388 MR. ANDERSON: Perhaps putting that 25 up there wasn't a great idea. The intent of  
1389 that was to show that if we had a hit in a monitoring well that was not just barely over the  
1390 detection limit or over the action level -- significantly over the action level, then we  
1391 would skip a lot of those other steps and go immediately to tier two.

1392

1393 I want to distinguish between monitoring wells and drinking water wells. Drinking water  
1394 wells, nothing else matters but getting bottled water out to the residents and getting a  
1395 system installed.

1396

1397 MS. KONECKY: So a drinking water well, that wouldn't be the criteria?

1398

1399 MR. ANDERSON: Absolutely not. I think we're going to modify that 25 criteria. It's a  
1400 little confusing. Thank you.

1401

1402 Tier two investigation, again, we have a hit, we know it's a hit, we know it's valid, we've  
1403 got to go out and understand what's going on. Just like taking your car to the mechanic,  
1404 you got a problem, you take the car in, the mechanic's going to do an analysis, hook it up  
1405 to a machine, he's going to figure out what's wrong with the car before he recommends  
1406 whatever fix might be appropriate. That's analogous to what we're doing here.

1407 Obviously, the stakes are a little higher here because we're talking human health.

1408

1409 Upon escalation of tier two, we would conduct an expanded groundwater investigation.  
1410 You know, this might consist of bringing our Geoprobe rig out, you know, putting in  
1411 some points, upgradient it, sidegradient it, downgrading it, try to do bracket that  
1412 particular well so we can actually understand what's going on. We might install some  
1413 additional monitoring wells. We would look at doing some hydraulic evaluation of the  
1414 regime around the well so we can see if there's some type of hydraulic phenomenon or  
1415 some type of hydraulic influence that would be causing this to be going on.

1416

1417 We would escalate to tier three if after our investigation and evaluation we see that there  
1418 may be some movement of the plume that could threaten the water supply well. We  
1419 would want to mitigate that. You know, we don't want to have water supply wells  
1420 contaminated, so we might put something in place to do that, or if there's an indication  
1421 that the plume might be breaking containment. You know, if we show that -- you know,  
1422 I'm not saying this is going to happen. This is just for discussion purposes only. If we  
1423 see that the hydraulics are such, and we've had a hit out here in maybe one of these wells  
1424 that shows that, oh, geez, the plume looks like it's escaping the hydraulic containment of  
1425 the extraction well, not a good thing. And not very likely, but we're obviously going to  
1426 be diligent about making sure that that doesn't happen. So the time frame for doing this  
1427 investigation, typically once -- you know, we have to confirm the data, confer with  
1428 regulators, we have to plan, we have to collect the data, and we have to evaluate it. It  
1429 could be six to nine months just for rough planning purposes.

1430

1431 Slide.

1432

1433 Okay. Tier three is when we actually take action; we determine that there's a problem  
1434 and we need to take action. And this is the third time I've said it because it's so  
1435 important, but we would provide alternate water to impacted residents, no questions  
1436 asked.

1437

1438 What are some of the potential actions that we would do? Obviously, there's a lot of  
1439 things out there that one might do. But you want to make sure you select the proper  
1440 response action based on what the investigation would tell you.

1441

1442 In consultation with the regulators, these are some of the things that could happen. We  
1443 might decide to modify the pumping rates of the our extraction wells because the  
1444 hydraulics might be such that we could influence the flow to make sure that we modify  
1445 the containment process a little bit. So might augment the containment system. We  
1446 could install new extraction wells perhaps; we might put in a groundwater circulation  
1447 well, some type of augmentation of the existing containment system to bring that back  
1448 into containment. There might be other groundwater remediation techniques that we  
1449 could put into place to block it off at the source area. Or if we determine that there  
1450 might be some hydraulic -- some other factor, some external factor that's changed the  
1451 hydraulics that is external to the Corps' operation, then we have a little -- then local well  
1452 operators might have to modify their pumping operations.

1453

1454 MS. KONECKY: Garth, excuse me. This is Melissa Konecky.

1455

1456 Someone just had a question about the house that you had to supply bottled water to, you  
1457 know, within hours. How often was that house's water supply tested?

1458

1459 MR. ANDERSON: We test it quarterly.

1460

1461 MS. KONECKY: Okay. So every three months. And then it was high and getting  
1462 higher. And then --

1463



1464 MR. ANDERSON: Actually, the complaint was it was low flow.  
1465  
1466 MR. BIGELOW: Yes, it was low flow. It was causing back pressure. We didn't get any  
1467 contaminants coming through. They weren't getting enough flow in the house, and we  
1468 determined that it had something to do with the way the carbon was filled into the tank.  
1469  
1470 MS.. KONECKY: Oh.  
1471  
1472 MR. ANDERSON: So what happened was we had to take the carbon unit off line, which  
1473 would mean they didn't have drinking water supply. So while we were maintaining the  
1474 system, we provided them with bottled water, but again, just to illustrate how quickly  
1475 we would provide bottled water if necessary.  
1476  
1477 MS. KONECKY: And they had been and will continue to be sampled quarterly like  
1478 forever?  
1479  
1480 MR. ANDERSON: Yes.  
1481  
1482 MS. KONECKY: Oh.  
1483  
1484 MR. BIGELOW: Actually, those are semi-annual, the before.  
1485  
1486 MR. ANDERSON: Oh, correct. Thank you. Semi-annually.  
1487  
1488 Brady, go ahead -- it's a little confusing, the sampling frequency. But go ahead.  
1489  
1490 MR. BIGELOW: If they have GAC systems, they're sampled -- if they have carbon  
1491 systems, they're sampled semi-annually. And the way we treated the quarterly ones were  
1492 wells that appeared to be within the footprint of the plume but didn't have the GAC  
1493 systems, then we would sample them quarterly just to keep a close eye. But the systems  
1494 that we have set up with the GAC system, we do those semi-annually.

1495

1496 MR. ANDERSON: All right.

1497

1498 Next slide.

1499

1500 MS. MOORER: Lynn Moorer again. Mr. Anderson and Ms. Tholl, most of the  
1501 information, in fact, virtually all the information you have been presenting this evening  
1502 about your so-called response plan, is not contained within your draft final containment  
1503 evaluation work plan dated June 2006 that we touched upon a little bit at the last RAB  
1504 meeting. What is the status of that report which Mr. Marquess informed you in a letter  
1505 dated August 24th that he would not accept as a final document? So what is -- where -- is  
1506 this information going to be or is it in an official form so that this -- what you've given us  
1507 here is not just completely ephemeral, fleeting, and written on a whim like most of the  
1508 things you tell us?

1509

1510 MR. ANDERSON: This information -- well, let me back up. The containment  
1511 evaluation work plan, yeah, there was some disagreement between EPA and the Army,  
1512 and we are at a point where we now agree on what goes into it. We've responded to the  
1513 final set of comments produced by EPA, we've come in concurrence, and we're ready to  
1514 go with a final document. And actually, we extracted this information from what will  
1515 be the final document when it hits the streets. And another element of the containment  
1516 evaluation work plan that is not in that draft is the complete well network, not just the  
1517 southern perimeter, but the southern and eastern perimeter wells are now contained in the  
1518 work plan.

1519

1520 MS. MOORER: I have a couple of specific questions that were extremely problematic  
1521 that were in your report, what you termed the draft final dated June, 2006, and that is the  
1522 frequent use of the term or phrase "clear trend." Are you still using that terminology?

1523

1524 MR. ANDERSON: No.

1525

1526 MS. MOORER: All right. And then the other thing being, "any tier-three action would  
1527 be developed according to the routine and appropriate design process." Are you using  
1528 that type of phraseology?  
1529

1530 MR. ANDERSON: Essentially what you see up here is what will be in the final  
1531 document.  
1532

1533 Scott has some additional information here --  
1534

1535 MR. MARQUESS: No, I just want to verify that we've gone through -- we had some  
1536 comments on that, I think that iteration of the document that you see, and sent a letter to  
1537 the Corps and had a number of comments including some comments that specifically  
1538 dealt with the response action plan that you saw tonight. And we got a letter from the  
1539 Corps this week, last week, responding to our concerns and questions on that iteration of  
1540 the document. And from my review of the letter and what you've seen tonight reflects  
1541 what we've agreed to and what we believe is appropriate, and so I think we're ready to  
1542 move forward with finalizing the document. We need to get the document itself  
1543 produced consistent with the letter that we've seen, which I anticipate will happen and  
1544 we'll wrap it up, and I think it should be complete at that point.  
1545

1546 MS. MOORER: So will this document also be called the containment evaluation work  
1547 plan?  
1548

1549 MR. MARQUESS: Yes.  
1550

1551 MS. MOORER: Okay. May I ask you, Mr. Marquess, while you're still there, your  
1552 August 24th, 2006 letter contains a statement in here that's pretty troubling. It says, "It is  
1553 likely that the load line 1 TCE plume cannot be contained by the current system."  
1554

1555 MR. MARQUESS: That refers to I think actually some of the data that Brady was going  
1556 over relative to monitoring well 80. So the plume here -- I don't know how far, maybe a

1557 thousand feet, the five part per billion TCE line extends maybe a thousand feet beyond  
1558 extraction well 12. Extraction well 13 is not on line, not part of the system at this point,  
1559 and I don't believe at this point there's a plan to do so. What they showed today on  
1560 monitoring well 80 is some downward trending. I believe there's also some data that they  
1561 haven't reported that's being validated that shows even lower levels in monitoring well  
1562 80 in the most recent sampling round. So those are all positive trends. I think the notion  
1563 in terms of how does that fit into this tiered approach is that they are going to be  
1564 evaluating the performance of that system relative to the containment and the capture of  
1565 the farthest -- the southern end of the plume.

1566

1567 MS. MOORER: And presumably coming up with supplemental strategies?

1568

1569 MR. MARQUESS: Yes, as required. Yes.

1570

1571 MS. MOORER: To me, that seems like a fairly important admission or acknowledgment,  
1572 because to this point I think most of us have gotten the general message from each of  
1573 these repeated RAB meetings that load line 1 was going to successfully and completely  
1574 divert or redirect and/or handle, however you want to say it, all of load line 1. I mean,  
1575 that is the treatment system that you've got in place and will soon come on line. And  
1576 this a fairly important, to me, revelation.

1577

1578 MR. ANDERSON: Well, it's important to keep in mind that this new extraction well  
1579 and treatment system has only been in operation since March. And if you look at our  
1580 response action process, it would be fair to say that we're in the tier two at the moment.  
1581 We have not had enough time to fully evaluate the hydraulic capture of the new system  
1582 and to look at the chemical data trend to determine the effectiveness of the new system.

1583

1584 Whenever you put a new remedial action in place, you evaluate it for a year to determine  
1585 its effectiveness. So we're well down that road in evaluating. And if at the end of that  
1586 period we determine that other things need to be done in accordance with our response

1587 action plan, then yes, something else may be warranted. But again, we don't have the  
1588 answer to that yet.

1589

1590 MS. MOORER: I just want to note for the record that that's a fairly important  
1591 acknowledgment or admission, because a lot of you will remember about two years ago  
1592 at this time that Mr. McCollum was making extremely broad predictions that the actions  
1593 that were being planned for load line 1 were going to solve all the problems, were  
1594 absolutely going to cure that. So at least I am somewhat encouraged that you are now  
1595 acknowledging that you don't have that farseeing a planning process that you're able to  
1596 predict that you've got things well underway. Your record has been have spotty with  
1597 respect to your success on this.

1598

1599 Let me ask one other thing. Are you going to be evaluating the entire system annually  
1600 using particle tracking or contaminant transport simulation?

1601

1602 MR. ANDERSON: As a part of the Annual Remedy Performance Report, again, it's a  
1603 complete assessment of all those data elements that I talked about here, you know,  
1604 hydraulic, chemical, and using the groundwater model as a tool for evaluating the  
1605 hydraulic capture zone. So, you know, part of modeling is part of the tracking. Again,  
1606 I'm not a groundwater modeler, so I'm not going to get too far into the details. But yes,  
1607 the groundwater model does the particle tracking and there is some contaminant transport  
1608 component of that.

1609

1610 MS. MOORER: But you're not considering that a function of the annual containment  
1611 evaluation?

1612

1613 MR. ANDERSON: Yes. We --

1614

1615 MS. MOORER: Or are you making a distinction here?

1616

1617 MR. ANDERSON: No, no. Groundwater modeling, which does those things, is an  
1618 important component of our Annual Remedy Performance Report.

1619

1620 Does that answer your question?

1621

1622 MS. MOORER: Which you will be doing annually?

1623

1624 MR. ANDERSON: Yes.

1625

1626 MS. MOORER: All right. Thank you.

1627

1628 MR. ANDERSON: Okay. Last item. One of the other things we do is we have been  
1629 assisting the Omaha District as we talked about in the past with MUD oversight. Right  
1630 now we're also assisting them with some data validation of some data that was collected  
1631 in May and September. I'm actually going to let Scott talk about that real briefly.

1632

1633 And the second item before I let Scott talk is the monitoring well network. I think we  
1634 addressed that earlier, that we'll be assisting Omaha in accessing the monitoring well  
1635 network that MUD will be proposing.

1636

1637 Go ahead, Scott.

1638

1639 MR. MARQUESS: I want to recognize Jenny McGuire from the U.S. Geological Survey  
1640 is here. USGS does work for MUD as part of their regular -- I guess regular  
1641 groundwater monitoring program. Feel free to jump up and yell at me when I diverge  
1642 from the facts. I believe there are six wells that USGS is monitoring for MUD that are  
1643 significantly east of the plume. There's one here, one, two, three, four, five, six wells,  
1644 monitoring wells that they monitor how many rounds, maybe three rounds?

1645

1646 MS. MCGUIRE: We did four.

1647

1648 MR. MARQUESS: And they post the results on the MUD website --  
1649  
1650 MS. MCGUIRE: It's on the USGS website.  
1651  
1652 MR. MARQUESS: All right. Well, you've got a link on the MUD website I think. And  
1653 they sampled these wells in May of '06 and alerted EPA and the Corps as to the results,  
1654 because in all six of the wells I believe they reported detections of Nitrotoluene and  
1655 Nitrobenzene which show up under the explosives analysis. They are not things that we  
1656 see in any significant levels anywhere here, but they would show up as part of the  
1657 explosives analysis that we regularly do when we are looking for RDX or TNT.  
1658  
1659 So in the May data, in these wells that were way out here (indicating), they reported  
1660 nitrotoluene and nitrobenzene detections at about .03 to .04 parts billion, which is just  
1661 above the detection limit of about .02 parts per billion. So naturally when we heard about  
1662 that, that kind of raised some eyebrows.  
1663  
1664 Yes, ma'am?  
1665  
1666 MS. WAGEMAN: Quick question. In regards to the well, I know that one of the  
1667 monitoring wells -- and correct me if I'm wrong -- but isn't one of those wells on County  
1668 Road on J and 5, right across from Barnes?  
1669  
1670 MR. MARQUESS: Here's J (indicating). There's two wells on J I believe, two  
1671 monitoring wells on J.  
1672  
1673 MS. WAGEMAN: Hold on. Sorry, guys. Right here (indicating)?  
1674  
1675 MR. MARQUESS: I think they're out here (indicating).  
1676  
1677 MS. WAGEMAN: What's here (indicating). Because MUD had proposed --  
1678

1679 MR. MARQUESS: I don't know. I can show you where they are on the USGS map.  
1680 This is what we translated, and we had trouble reading their map.  
1681  
1682 MS. WAGEMAN: This is the one right here (indicating) that MUD's has had to get a  
1683 permit for, literally here (indicating). So if it's somewhere else, then my question is --  
1684  
1685 MR. MARQUESS: I can show you where they are in their sampling analysis plan --  
1686  
1687 MS. WAGEMAN: Okay.  
1688  
1689 MR. MARQUESS: -- which we tried to translate here, but we may not have done it  
1690 accurately.  
1691  
1692 MS. WAGEMAN: Yeah. I'll be perfectly honest with you, I think it's sitting -- one of  
1693 them's sitting right here (indicating). Because this is my house, right here (indicating).  
1694  
1695 MR. MARQUESS: You want us to put that on the map?  
1696  
1697 MS. WAGEMAN: "Lynda's house," right here (indicating).  
1698  
1699 MR. MARQUESS: Tape change. Timeout.  
1700  
1701 MR. ANDERSON: Let's take five while we change the tape.  
1702  
1703 (9:10 p.m. - Recess taken)  
1704  
1705 (At 9:15 p.m., with all parties present as before, the following proceedings were had, to  
1706 wit:)  
1707  
1708 MR. ANDERSON: Okay. Scott, I believe you were mid sentence when we had to  
1709 change the tape. So go ahead.



1710

1711 MR. MARQUESS: I guess I'll start over here again.

1712

1713 Jenny, please jump up and yell at me if I get stuck.

1714

1715 So USGS on MUD's behalf collected samples from this six wells out in this area in May  
1716 of '06, reported to EPA some detections of nitrotoluene and nitrobenzene very near the  
1717 detection limit of .02 parts per billion. The detections were reported at about .03 to .04  
1718 parts per billion. Naturally, when we hear these kinds of things, if they don't really make  
1719 a lot of sense relative to what we understand about the site, nitrotoluene and  
1720 nitrobenzene not common contaminants that we're finding at the site, so we wanted to  
1721 look into it a little further.

1722

1723 We obtained from -- EPA and the Corps obtained from MUD and the USGS the  
1724 analytical data that went into the May sampling event, had our people do a data review, a  
1725 data evaluation, and determined that the data particularly for these constituents at the  
1726 very low levels near the detection limits was of questionable usability, questionable  
1727 quality. So initially the lab itself had identified method blank contamination problems,  
1728 problems where these contaminants, nitrobenzene, nitrotoluene were showing up in  
1729 samples that were run with no -- no environmental samples, just their blank samples, their  
1730 clean water samples this nitrotoluene and nitrobenzene were showing up. So that pointed  
1731 out a problem. It didn't address all of the wells or all of the samples. So we looked  
1732 harder at the data and found some issues with -- some calibration issues and general data  
1733 quality that leads that data to be questionable at these very low levels. So as part of  
1734 MUD's ongoing monitoring program, they continued on and sampled again in September.  
1735 That data has yet been validated. The initial results show those same wells, there were no  
1736 detections in those wells.

1737

1738 And in that second September round EPA also sent was we call performance evaluation  
1739 samples to MUD's lab, which is Severn Trent Lab in St. Louis, in Denver, where EPA  
1740 provided samples of explosives of known concentrations. And the lab was not apprised f

1741 this. These were just samples that were submitted with MUD's environmental samples.  
1742 And we sent them two samples with varying levels of explosives in it, and the lab  
1743 detected those acceptably within their performance criteria. And so for the September  
1744 data, it appears that the lab has performed acceptably. There were no detection reported.  
1745 Again, that data still needs to be validated. So there's some question in the May data, but  
1746 our assessment would be that there's no nitrotoluene or nitrobenzene contamination out in  
1747 this region that would warrant further action beyond continued sampling by MUD and  
1748 USGS as part of their program.

1749

1750 Jenny, is that --

1751

1752 MS. MCGUIRE: That's correct.

1753

1754 MR. RANDAZZO: Paul Randazzo --

1755

1756 MR. MARQUESS: Before you ask, Paul, this data has not yet been reported on USGS  
1757 website. We're waiting to go through this data validation process. So the May data will  
1758 be posted on the website shortly with an explanation of what I just went through, and  
1759 September data will be posted after that data is validated.

1760

1761 MR. RANDAZZO: I imagine you would be very happy if I said that was my question.  
1762 You might have said this and I missed it. But what caused the initial hits? How come we  
1763 are non-detect now and we were detect before?

1764

1765 MR. MARQUESS: I would characterize it as we've always been non-detect. But there  
1766 was a problem with the -- we got a piece of equipment in the lab that -- I got a bunch of  
1767 clean water that's never been exposed to explosives in its life. And it goes through the  
1768 equipment, and it says that there's .03 parts per billion nitrotoluene in this clean water.  
1769 So that was the method blank contamination. So when we ran the laboratory quality  
1770 control check, these things showed up. So there was some laboratory problems. Plus  
1771 again, at these very, very low levels, near, you know, .02 parts per billion and detection

1772 reported at .03, you're in kind of the noise range in terms of the reliability of the  
1773 equipment. There were some calibration problems -- "problems" probably isn't the right  
1774 way to phrase it.

1775

1776 There were some calibration issues that were identified during the data validation/data  
1777 review process that would probably also impact that.

1778

1779 MR. ANDERSON: Thank you, Scott.

1780

1781 At this time we're on our last slide. Again, we always -- yes, Ms. Konecky?

1782

1783 MS. KONECKY: Melissa Konecky Someone just reminded me that I had requested a  
1784 drawdown map of what would happen when MUD was pumping 104 million gallons, you  
1785 know, like during August, and are we ever going to be able to see that? Because I  
1786 mean, I think people would be shocked if they could see what's going to happen.

1787

1788 MR. ANDERSON: Well, in the MUD model, they do have a scenario that shows a 104  
1789 million gallon drawdown.

1790

1791 MS. KONECKY: Well, we're over whatever that maximum number of days that they  
1792 can pump it.

1793

1794 MR. MARQUESS: I'll try. I believe MUD has a version in their model that shows  
1795 pumping at steady state at 104 mg/d and one at 90 mg/d, and you don't get the plume  
1796 deflection at 90 but at 104 you do. It starts to turn at 104, at 104 steady state. So that's  
1797 not -- which would be beyond the 52 mg/d average that they're permitted to pump at.

1798

1799 MS. KONECKY: It would sure be nice to have that on a map so people could just kind  
1800 of visually look --

1801

1802 MR. MARQUESS: I believe that's in

1803

1804 MUD's report on their website. I believe that's one of the -- I have it with me. If you  
1805 want to look at

1806

1807 MS. KONECKY: Could you get it right now so that we could all see it?

1808

1809 MR. MARQUESS: Well, no, not really.

1810 It's in a big stack over there, and I don't know exactly which one it is. I'd be happy to  
1811 share it with you if I can find it.

1812

1813 MS. MOORER: I have a question for you Mr. Marquess, and following up for you Mr.  
1814 Anderson.

1815

1816 Mr. Marquess, I noted at the last meeting that you had asked MUD to calibrate their  
1817 groundwater model using August data, which I think a lot of us thought was a very good  
1818 idea. I wasn't surprised, but yet I was disappointed to see MUD's response to you or to  
1819 EPA basically saying, we're not going to do it

1820

1821 So my question -- and I'm citing from their supplemental groundwater report dated May  
1822 2006, when they said specifically, "We're not going to do it." So what is EPA going to  
1823 do in response to MUD's refusal to use the August data?

1824

1825 MR. MARQUESS: Well, as you're aware, EPA is not the regulatory agency here. And  
1826 again, our preference is to not rely on the model as much as to rely on the monitoring. So  
1827 we will address the factors within our realm of control which is the degree and frequency  
1828 of the monitoring program which is what you saw here tonight for the most part.

1829

1830 MS. MOORER: So essentially you're not planning to try to bring any other type of  
1831 leverage to bear in order to have that sort of calibration used?

1832

1833 MR. MARQUESS: Again, our opinion is that the primary tool to ensuring containment  
1834 and proper performance here will be the monitoring rather than the modeling. So that's  
1835 the way we will be focusing our efforts.  
1836

1837 MS. MOORER: All right. Previously in the meeting, Mr. Anderson, you said you were  
1838 working with the Omaha District with respect to providing shall we say technical input  
1839 to MUD on various aspects of it. I think that we would find it useful for you all that is at  
1840 the next RAB meeting to get from MUD through the political connections that you've got  
1841 a large map that can be displayed in conjunction -- of the 104 million gallons a day  
1842 drawdown. So if MUD has produced it, fine, can you get a big version of it for us to  
1843 display on the walls for our meetings along with these other ones?  
1844

1845 MR. ANDERSON: We could certainly print that off. That's easily done.  
1846

1847 MS. MOORER: I think that would be helpful to give us a perspective in addition to the  
1848 others ones that we have. Will you do that?  
1849

1850 MR. ANDERSON: Yes.  
1851

1852 MS. MOORER: Thank you.  
1853

1854 MR. LUETKENHAUS: I believe, Mr. Anderson, at the last meeting I asked you for that.  
1855 Now all of a sudden tonight, yeah, we can do that.  
1856 Why don't you have it tonight?  
1857

1858 MR. ANDERSON: We did refer to an existing report that was already there that had  
1859 been produced.  
1860

1861 MR. LUETKENHAUS: This is not the first time this has been asked for. I believe if we  
1862 go back six months, it's been asked for. Now, want -- all right. Let me -- I'll give you

1863 one more time. If it's not at the next meeting, you won't like the letter I'm going to write,  
1864 I'll guarantee you.  
1865  
1866 MR. ANDERSON: Very good.  
1867  
1868 MR. LUETKENHAUS: We want a drawdown map in the middle of summer, low flow --  
1869 well, that 104 million gallons a day and after 30 days and after 60 days and after 90  
1870 days.  
1871  
1872 MR. ANDERSON: What you're asking for is something different.  
1873  
1874 MR. LUETKENHAUS: No, it's the very same thing. I'm just asking for more of them.  
1875 That's all.  
1876  
1877 MR. ANDERSON: Right now we will commit to taking the map out of the report and  
1878 putting it out so we can all look at it. What you're asking for is a little more complex --  
1879  
1880 MR. LUETKENHAUS: No, it's not. We're supposed to share information if I remember  
1881 correctly now. I'm sharing information with you of what I would like to have because  
1882 there's a need for it, and you're telling me you don't want to share information with me.  
1883  
1884 MR. ANDERSON: That's not what saying.  
1885  
1886 MR. LUETKENHAUS: Well, that's what you told me.  
1887  
1888 MR. ANDERSON: We're going to produce the map that Ms. Konecky asked for that's  
1889 out of the groundwater modeling report, which is the 104 million gallons per day steady  
1890 state, which is pumping from now, forever at that particular pumping rate.  
1891  
1892 MR. LUETKENHAUS: And after 30 days, after 60 days and after 90 days. That's after  
1893 the Platte goes dry, of course.

1894

1895 MR. MARQUESS: I think this scenario is steady state, meaning it's more than 30 days.  
1896 It's more intense pumping. This would be like the long-term steady state at 104 mg/d for  
1897 a year. That's what this represents.

1898

1899 MR. LUETKENHAUS: It can't pump that much per year.

1900

1901 MR. ANDERSON: All right. That's absolute worst case. It doesn't get worse than that.

1902

1903 MR. MARQUESS: It shows here, this map, 90 mg/d. They're not deflecting over to the  
1904 plume over here.

1905

1906 MR. LUETKENHAUS: Then after the Platte goes dry, after they pump it dry?

1907

1908 MR. MARQUESS: It's steady state at some -- I don't know what the river level is  
1909 associated with that.

1910

1911 MR. LUETKENHAUS: Mr. Anderson, I would like a drawdown map when MUD is  
1912 pumping 104 million gallons a day 30 days after the Platte goes dry, 60 days after -- well,  
1913 we can only go to 70 days after the Platte goes dry. I stand corrected.

1914

1915 I would like you to share that information with me at the next RAB meeting.

1916

1917 MR. ANDERSON: As you know, I do not have that information -- the Corps does not  
1918 have that information. MUD is the one that runs the model. And if they can do that  
1919 actual run within their model, then we can produce that map.

1920

1921 MR. LUETKENHAUS: I don't have the document with me, but I do believe I read  
1922 where you saw MUD's water model and you reviewed that information or somebody in  
1923 your organization did.

1924

1925 MR. ANDERSON: That is correct.  
1926  
1927 MR. LUETKENHAUS: All right. Then it shouldn't be too big of a problem to crank  
1928 them up on the telephone and say, hey, send me a copy or fax it or whatever.  
1929  
1930 MR. ANDERSON: I hope it's that simple. We will request that MUD run that scenario  
1931 and we'll give you an answer if that's possible by the next RAB.  
1932  
1933 MR. LUETKENHAUS: Well, it shouldn't be any problem. Now, on these new -- I've  
1934 got three questions here. On the new monitoring wells, how far away from the plume  
1935 edge are you putting those in about, ballpark?  
1936  
1937 MR. ANDERSON: Well, you can look at the scale. Most of them are within probably,  
1938 you know, a thousand, 2000 feet of the edge of the plume.  
1939  
1940 MR. LUETKENHAUS: About a quarter of a mile?  
1941  
1942 MR. ANDERSON: Yeah.  
1943  
1944 MR. LUETKENHAUS: All right. At two feet a day, if that breaks containment, how  
1945 many days is that going to take before you even notice it in monitoring the well?  
1946  
1947 MR. ANDERSON: Well, we can do the math real quick.  
1948  
1949 MR. LUETKENHAUS: We're talking over a hundred days, and it takes 60 to 90 days for  
1950 you to get a report back from the laboratory.  
1951  
1952 MR. ANDERSON: You also have to realize that water does not move in this direction  
1953 two feet per day; it moves in this direction at two feet per day (indicating). It's going to  
1954 move -- if it moved at all, which we don't think it will, it's some small fraction of that.  
1955 And, you know, it might divert a little bit but still continue downstream, downgradient.



1956

1957 MR. LUETKENHAUS: I talked to Lincoln Water Works, and MUD is projecting they're  
1958 going to get most of their water from the Platte River. Lincoln Water Works says no,  
1959 they're not, they're going to pump it out of the aquifer because they don't get the recharge  
1960 that they're figuring on in their water model.

1961

1962 So you can tell me that's not going to go east, but I don't -- I could be wrong. I've been  
1963 wrong before. But it's going to pull that plume right east, and it's going to be a long time  
1964 I guess my question is, why didn't you put that within a hundred feet of the plume edge?

1965

1966 MR. ANDERSON: Well, knowing precisely where the plume edge is difficult. We  
1967 know approximately where the edge of the plume is, and we need to put it out at least far  
1968 enough so that we can catch the edge of the plume if it would ever move that way, which  
1969 we don't think it will.

1970

1971 MR. LUETKENHAUS: At the last meeting you said you were very confident that these  
1972 lines here are the edge of the plume.

1973

1974 MR. ANDERSON: Correct.

1975

1976 MR. LUETKENHAUS: Now you're telling me that you don't know where the edge of  
1977 the plume is. Now, which is it?

1978

1979 MR. ANDERSON: We know where the plume edge is? And a thousand feet is very  
1980 close to the edge of the plume.

1981

1982 MR. LUETKENHAUS: No, sir, it isn't.

1983

1984 MR. ANDERSON: Well, okay.

1985

1986 MR. LUETKENHAUS: A hundred feet would be a lot better. I'm tickled to death that at  
1987 least you got them in there, but, I mean, I kind of question what the hell you're doing,  
1988 because you're not protecting the public if it takes three months for it to get over there,  
1989 which it might when they start pumping in drought conditions, might not. But we're not  
1990 going to know it for four or five months.

1991

1992 And then you've lost your containment, and according to your pictures up here, it's going  
1993 to take you another six to nine months to figure out a plan of action.

1994

1995 MR. ANDERSON: Well, you know, in the remote event that this would actually be  
1996 drawn this way, we would see signs hydraulically that there was some influence on this  
1997 part of the plume before we'd see any kind of plume movement. If we saw some  
1998 drawdown that would indicate that the contamination could be drawn this way, then we  
1999 would know before it would ever reach this well.

2000

2001 MR. LUETKENHAUS: There's something really funny here because you refuse to bring  
2002 the drawdown map here. And I'm very leery and I don't trust what you're telling us for  
2003 that reason alone, because we've asked for it and asked for it. And tonight you say, oh,  
2004 yeah, we can get that, no problem, and last month when I asked you, all of a sudden it's  
2005 not here tonight.

2006

2007 MR. ANDERSON: We did show you the 104 mg/d drawdown map just now. And we  
2008 know that that scenario that is not actually permitted, but they ran it anyway, that the only  
2009 place there's any risk according to the model is right in here (indicating). And that's why  
2010 we're going to be intensely monitoring this area of the plume.

2011

2012 MR. LUETKENHAUS: And I'm sure probably true. That's why they moved three wells  
2013 from the south end to the north end of the well field, because it was going to suck that  
2014 plume right into their well field.

2015

2016 MS. MOORER: It wasn't using the most current map either.

2017

2018 MR. LUETKENHAUS: On the 404 permit, they're required to use the most recent  
2019 information according to the 404 permit. Now you're telling us tonight, no, we're not  
2020 worried about it. You bring that to the Omaha Corps' attention.

2021

2022 MR. ANDERSON: Again, we've confirmed that the plume as reported in 1997 and  
2023 confirmed by our Geoprobe was fairly accurate. And they actually ran a scenario that  
2024 was more conservative than what the plume actually showed.

2025

2026 MR. LUETKENHAUS: Do you have a plan of action as to who's going to shut down  
2027 MUD when they move that plume?

2028

2029 MR. ANDERSON: If you look at -- we explained the tier process. And it's not an easy  
2030 thing to -- you know, any type of external influence we would look at, if there was some  
2031 type of risk of the plume breaking containment from whatever pumping scenario,  
2032 whether -- you know, it could be external influence, you'd have to show that it was  
2033 actually attributable to a specific operation. And we would -- let's just say for discussion  
2034 purposes -- and I'm not saying this is going to happen -- for discussion purposes that we  
2035 could attribute it to MUD, then we would prevail on them to modify their pumping  
2036 scenario.

2037

2038 MR. LUETKENHAUS: Do you have this plan written down? Is it in a letter? Will there  
2039 be a document on this?

2040

2041 MR. ANDERSON: You have to go back to the permit. I wasn't prepared to talk  
2042 specifics of the permit tonight.

2043

2044 MR. LUETKENHAUS: It's not such a difficult question. It's only about 12, 14 months  
2045 down the road when they start pumping. And so if it takes them three months, they'll be  
2046 pumping probably in the middle of summer, and so you've 16 months before they would  
2047 move that plume maybe. Maybe it's something you might think about.

2048

2049 MR. ANDERSON: We'll definitely think about it. That's why the urgency of getting the  
2050 wells in now, so that we have that network in place before pumping begins.

2051

2052 MR. LUETKENHAUS: And one more question.

2053

2054 MR. ANDERSON: Yes.

2055

2056 MR. LUETKENHAUS: On the bottom map there you've got -- the '02 ROD does not  
2057 include the latest information on that map. Are you going to open up that '02 ROD and  
2058 make it current? The bottom map.

2059

2060 MR. ANDERSON: Are you talking over here (indicating).

2061

2062 MR. LUETKENHAUS: Yes, the green shaded area.

2063

2064 MR. ANDERSON: OK. What's your question now?

2065

2066 MR. LUETKENHAUS: Are you going open up the '02 ROD and make it current, change  
2067 it to where its actual conditions are?

2068

2069 MR. ANDERSON: We're not going to reopen the ROD. I mean, the ROD shows the  
2070 plume as we understood it in 1997. Obviously we've collected a lot more data, and our  
2071 understanding of the plume has changed, and that's what we depict in subsequent reports.

2072

2073 MR. LUETKENHAUS: But you're not going to make the ROD show that?

2074

2075 MR. ANDERSON: No. The ROD is what is, and that's the document that we live by.

2076

2077 MS. WAGEMAN: I'm so glad you said that.

2078

2079 I know that there have been some requests to open up and make some modifications to  
2080 the ROD in regards to the maps, because when we asked for, you know, MUD to run  
2081 current models, then they fall back and they run it on the original ROD and so they say,  
2082 we have a right to do that, and then the Corps backs them up on it.  
2083  
2084 I need to get back to some original questions here because I think, you know, all this is  
2085 fine and dandy, and I live to be here. We all know that. But here's my question: Who's  
2086 responsible for the plume?  
2087  
2088 MR. ANDERSON: The Army.  
2089  
2090 MS. WAGEMAN: Okay. Who's responsible for the MUD well field?  
2091  
2092 MR. ANDERSON: The Army is responsible for part of the permit.  
2093  
2094 MS. WAGEMAN: Who is responsible for the MUD well field?  
2095  
2096 MR. ANDERSON: I'm not sure I follow your question.  
2097  
2098 MS. WAGEMAN: It's a very simple question, Garth. MUD is responsible for the MUD  
2099 well field. And actually the people of Omaha are responsible for it because we've been  
2100 paying for it since 1995. So if you guys are responsible for the plume, it is your fiduciary  
2101 responsibility to make sure that it never moves, never had any problems.  
2102  
2103 And to make sure that happens, you have to be proactive; am I correct?  
2104  
2105 MR. ANDERSON: Correct.  
2106  
2107 MS. WAGEMAN: Excellent. I want to know where the heck my plan is. It's the same  
2108 plan that I talked about when we were sitting in the meeting with Senator Nelson.  
2109

2110 The response that you provided Senator Nelson's office, quite frankly speaking, was  
2111 exactly the same response that I expected you to send. I could have written it for you.  
2112 And the responses that you provided the Senator you fell back onto the 404 permit. And  
2113 the funny thing was, the whole time, I was questioning the very bits and pieces of the 404  
2114 permit that you were falling back and relying on.

2115

2116 Now, I don't know if you're aware of this, but Senator Nelson was an insurance lawyer,  
2117 so he understands this whole risk stuff. Okay? So know, the great thing I guess is that I  
2118 finally have in writing from the Corps what I was looking for all along; the bad thing is  
2119 that you guys still aren't taking seriously this, quote, disaster recovery plan that I was  
2120 talking about.

2121

2122 It goes back to a question that Paul had asked years ago: If there is an issue or a problem,  
2123 who's going to recognize it, who's going to be responsible for sending out the feelers and  
2124 the plan of action, and how long are you going to have to act, and what parameters are  
2125 you going to be looking for? And this is the stuff that we want in writing.

2126

2127 This "oh, yeah, we're going to take care of it" is baloney. You can go back to the  
2128 discussion that we had in Lincoln; you can go back to your tapes. I'd tell you to go back  
2129 to the transcripts, but a lot of times those are incomplete.

2130

2131 I want a disaster recovery plan so that if something moves or if you, as you say, detect  
2132 some inconsistencies somewhere without the plume even moving yet, I want to know  
2133 specifically what happened, when it happens, who's responsible, who checks it, and what  
2134 time frame so that you can ensure that your responsibility stays complete, because if it  
2135 ever moves, and you turn around and say we know or we didn't expect or we didn't  
2136 suspect, you know, granted, you can't be sued, but -- and you know it, and you fall back  
2137 on that, but others can't. And as I told Senator Nelson, I would not want to be a naked  
2138 baby in the water. And there are other factors, other organizations, other companies that  
2139 are going to have -- that they're at risk too, and it's just not fair or right. So is this planned?

2140

2141 Because I haven't seen anything on paper.  
2142  
2143 MR. ANDERSON: We did brief it tonight.  
2144 MS. WAGEMAN: Well, as I said, I was a little late.  
2145  
2146 MR. ANDERSON: Well, we covered that in some detail tonight. It's in the slides and it  
2147 is also contained -- it will be contained in the final version of the containment evaluation  
2148 work plan.  
2149  
2150 MS. WAGEMAN: So you don't have it in print on this table for me to take home  
2151 because I've requested it 14 billion times, and you didn't turn it into Senator Nelson? He  
2152 was specifically requesting that. Did you turn it in to Senator Nelson?  
2153  
2154 MR. ANDERSON: We responded to Senator Nelson, yes.  
2155  
2156 MS. WAGEMAN: Did you turn that into Senator Nelson?  
2157  
2158 MR. ANDERSON: We outlined our response plan in a letter to Senator Nelson.  
2159  
2160 MS. WAGEMAN: Okay. So the response plan that I've got a copy of is all you sent to  
2161 Senator Nelson?  
2162  
2163 MR. ANDERSON: Correct.  
2164  
2165 MS. WAGEMAN: Thank you very much.  
2166  
2167 MR. ANDERSON: Okay. And we've got some RAB topics we have for the next  
2168 meeting. We have the EW11 advanced oxidation process treatment; we're going to talk a  
2169 little more about the derivation of the surface water screening level, and we're looking  
2170 for some additional MUD maps.  
2171

2172 Right now I'm proposing a tentative date for the next RAB of January 25th. And I have  
2173 spoken to Ms. Konecky and that seems to be an acceptable date, but if we need to  
2174 confirm on that date later, I would like to know. We're very flexible on the date we have  
2175 the meeting.

2176

2177 MS. MOORER: Mr. Anderson, Lynn Moorner again.

2178

2179 I again reiterate the request that you give Ms. Konecky the courtesy of checking with her  
2180 before you announce dates for future meetings, tentative or not, because what that does is  
2181 then you've got reporters or whoever here and they go and they presume that the meeting  
2182 is going to be at that date, and then once it's changed, once -- you're able to get rid of at  
2183 least half of the people that normally would like to come to the meeting. This is not  
2184 acceptable. Please don't post a tentative date until you've conferred at least with Ms.  
2185 Konecky on that point. You've got half the people in the community that weren't able to  
2186 come because you pulled this trick the last meeting as well. And Ms. Konecky asked you  
2187 to not announce something until you at least confer with her on the next meeting date.

2188

2189 Would you at least be willing to do that?

2190

2191 MR. ANDERSON: Of course.

2192

2193 MS. MOORER: Why didn't you do it at this meeting? She asked you specifically --

2194

2195 MR. ANDERSON: Well, you've got to start somewhere. We threw a date out.

2196

2197 MS. MOORER: She asked you this more than a month ago.

2198

2199 MR. ANDERSON: Okay. But we also owe it to the rest of the public to at least put out a  
2200 tentative date so that they can weigh in on whether that date would work for the  
2201 community.

2202



2203 But anyway, it's a tentative date. If it does not work, then we will obviously do better on  
2204 getting the word out earlier and getting it posted on the website and sending out the e-  
2205 mail notifications of the next date.

2206

2207 MS. MOORER: Let me just reiterate, it's critically important that the information you  
2208 post on the website be accurate. It's not a substitute for hard copy information for the  
2209 people who don't use the Internet or don't use it frequently, but it's not acceptable for you  
2210 to leave incorrect information posted up there for a long period of time as has been your  
2211 practice.

2212

2213 MR. ANDERSON: We won't post the date until it's finalized.

2214

2215 Okay. Before we close, Scott Marquess just had a couple of closing comments.

2216

2217 MR. MARQUESS: A couple of things I wanted to apprise you of. There will be a public  
2218 meeting to discuss the University of Nebraska cleanup work. You may be familiar there  
2219 are four burial sites the university is proposing to clean up. That meeting will be on  
2220 November 8th, 7:00 o'clock, at the ARDC down the road in Ithaca. And we should have  
2221 pardon?

2222

2223 MS. MOORER: Excuse me. That's not a lot of notice.

2224

2225 MR. MARQUESS: That's at least two weeks I believe. I believe that's two weeks notice  
2226 at least. And we will have notice in the papers next week and a fact sheet.

2227

2228 Another issue I wanted to report was that we have finalized an agreement with Dow and  
2229 General Dynamics. It's signed, it's done, it's final. And within 60 days from yesterday  
2230 they will be commencing work at the site. And just a short summary is they're going to  
2231 be doing some sampling across here, groundwater sampling across this part of the load  
2232 line 1 plume looking for high concentrations of TCE that would then hopefully lead them  
2233 to some treatability testing. And there is a copy of that over -- there were copies of that

2234 back on the table back there, but it's kind of incomplete without -- I mean, the brunt of it  
2235 is the sampling plan which is a component of the order. So they'll be doing that work in  
2236 the near term.  
2237  
2238 And that's all I have.  
2239  
2240 MR. ANDERSON: All right. That looks like a wrap. Thank you for coming everybody.  
2241 Please drive safe. And hopefully you can still catch couple of minutes of the playoffs, the  
2242 last couple innings of the anyway.  
2243  
2244 Thanks. We're adjourned.  
2245  
2246 (9:55 p.m. - meeting adjourned).